

4-15-2015

# Consolidation of the Lake County Fire & EMS Departments Feasibility Study

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# Consolidation of the Lake County Fire & EMS Departments Feasibility Study



In cooperation with the



2015

## ACKNOWLEDGEMENTS

The Lake County Fire & EMS Departments Consolidation and Feasibility Study team would like to acknowledge the various Chief Fire Officers and their personnel in providing the data necessary to complete this study. The Lake County, Ohio Fire & EMS Departments include:

Fire Chief R. Michael Warner, Concord Township  
Fire Chief Ted Whittington, City of Eastlake  
Fire Chief Jeffrey Hogya, Village of Fairport Harbor  
Fire Chief Bob Lloyd, Village of Grand River  
Fire Chief Tony Hutton, City of Kirtland  
Fire Chief Frank Huffman, Leroy Township  
Fire Chief Gene Lutz, Madison Fire District  
Fire Chief Richard Harvey (Retired) Fire Chief Robert Searles, City of Mentor  
Fire Chief Bob Mahoney (Retired), City of Mentor-On-The-Lake  
Fire Chief Mark Mlachak, City of Painesville  
Fire Chief Frank Whittaker, Painesville Township  
Fire Chief James McDonald, Perry Fire District  
Fire Chief James Powers, City of Wickliffe  
Fire Chief Alan Zwegat, City of Willoughby  
Fire Chief Richard Harmon, City of Willoughby Hills  
Fire Chief Robert Posipanka, City of Willowick

A special “Tip of the Helmet” is extended to the Advisory Steering Committee, for their guidance and wisdom. A special thanks to Chief James Powers for his efforts in helping the Research Team get it right. The members include:

Mayor David E. Anderson, City of Willoughby  
Fire Chief James McDonald, Perry Fire District  
Fire Chief James Powers, City of Wickliffe  
Concord Township Trustee, Paul R. Malchesky

## Table of Contents

ACKNOWLEDGEMENTS .....	2
EXECUTIVE SUMMARY .....	4
INTRODUCTION .....	10
<b>Feasibility Study Project Purpose and Objectives</b> .....	11
CHALLENGES: .....	12
LAKE COUNTY .....	13
LAKE COUNTY FIRE DEPARTMENTS .....	17
<b>Description of Departments</b> .....	19
<b>Department Activity</b> .....	35
<b>Management and Personnel in Lake County</b> .....	36
<b>Management and Personnel by Department</b> .....	38
<b>Capital Assets in Lake County</b> .....	38
<b>Emergency Medical Service</b> .....	40
<b>Lake County Fire Service Shared Resources</b> .....	41
LEGAL ANALYSIS.....	48
FINANCIAL ANALYSIS .....	52
FIRE AND EMS OPERATIONAL ANALYSIS .....	55
<b>Background</b> .....	55
<b>The Model Description</b> .....	58
SCENARIOS FOR CONSOLIDATION.....	61
<b>Scenario A: Consolidation of Services into One District</b> .....	62
<b>Scenario B: Consolidation of Services into Two Districts</b> .....	64
<b>Scenario C: Consolidation of Services into Three District</b> .....	65
<b>Discussion and Financial Analysis of Scenarios and Staffing Options</b> .....	67
<b>Conclusion</b> .....	72
NEXT STEPS .....	75
APPENDICES .....	78
APPENDIX A .....	79
APPENDIX B .....	87
APPENDIX C .....	94
APPENDIX D .....	98
APPENDIX E.....	104
APPENDIX F.....	108

## EXECUTIVE SUMMARY

The Consolidation of Lake County Fire Departments Feasibility Study grant project, which was funded by the State of Ohio Local Government Innovation Fund (LGIF) Program, tests the feasibility of consolidation of the 14 municipal Fire Departments and the 2 Fire District into a single (or up to 3) consolidated Fire Districts to improve services at reduced cost. It is also to explore if a partnership of shared fire department services and equipment will result in efficiencies that reduce the overall cost while maintaining or improving services.

To implement this study a Research Team with expertise in fire organizations, legal requirements, financial analysis and local government organization and management was assembled. To assist the Research Team in this effort, an Advisory Steering Committee was formed. The Advisory Steering Committee included representatives of the two supporting entities; the Lake County Mayor and Managers Association and the Lake County Township Trustees Association as well as two representatives of the Lake County Fire Chiefs. This Committee met with the Research Team to discuss options, data collection, and evaluate the proposals for consolidation. They provided valuable insight into the existing workings of the Lake County fire community.

There were several objectives of the study:

- Expand the opportunity for improved level and quality of service provided
- Reduce overall costs of service
- Identify advantages and disadvantages of creating one or more districts for fire service
- Explore expanded shared services and equipment

The following assumptions were made going into the study:

- The study gathered various items related to each departments' operations, level of service and response time, no evaluation of each individual's departments effectiveness was determine.
- It was assumed that each community had determined that the current level of service and its manpower level currently being provided was acceptable
- It was assumed that changes to administrative structure would not immediately affect the level of service each community currently provided.
- Station locations were not analyzed but assumed to be appropriate to continue each communities same level of service.

The data collected was for the base year of 2012. This was the year at the beginning of the study that the most complete data was available. While changes have occurred since the study began the analysis is based on the one year of data to maintain consistency among all data sets.

Lake County is located east of the City of Cleveland on the shores of Lake Erie. It is the smallest county in area in the State of Ohio, but ranks 11<sup>th</sup> in population. The County is largely classified as urban but has a distinct rural character in the eastern portion of the County. The County is divided into 23 political subdivisions including 18 municipalities and villages and 5 townships. The County established in 1840 from portions of Geauga and Cuyahoga Counties was rural and

the home too many nursery and vineyards until the mid-twentieth century when growth and expansion from adjacent Cuyahoga County resulted in a population boom and the creation of many of the communities that exist today. As each community was incorporated, it established the services that its residents and businesses desired within their own boundaries. As a result, today there are 14 individual Fire Departments and 2 Fire Districts serving the County.

Lake County has several sites that are considered high hazard, such as the Perry Nuclear Power plant, and numerous chemical production facilities. Additionally, there are natural conditions that affect the communities. There are two major rivers that run north/south through the county, both of which have experienced significant flooding and threatened lives and property. There are steep cliffs and deep ravines as well as 30 miles of Lake Erie shore line that present potential dangerous situations.

Since there are only 16 Fire entities yet 23 political subdivision, there are several departments that provide service to more than just one community, which indicates that collaborative effort already, exist in the delivery of Fire and EMS service in Lake County.

In 2012, Lake County Fire Departments responded to 37,283 requests for Fire, EMS and Other service calls. All Departments provide Fire and EMS/Advanced Life Support services to their jurisdictions. The primary requests for service in 2012 were for EMS. EMS represents 21,448 request or 57.5% of the activity in 2012. Fire call requests were 4,468 or 12% of all the departmental activity. The level of EMS activity has had an impact on how departments operate their stations, and focused the departments on providing high quality EMS service and response while continuing to provide Fire safety response.

There are a total of 719 Fire & EMS personnel distributed throughout Lake County, Ohio, with a ratio of 296 Full-time personnel to 423 Part-time personnel. Many of the Part-time personnel work for multiple departments to generate full-time income. Part-time personnel are also a source of potential full-time applicants when a position is available. Except for the City of Willowick where all staff are part-time except the Chief, the Village of Grand River, and Leroy Township where all personnel are part-time and Eastlake where all staff are full-time, part-time personnel are used alongside full-time personnel to cost effectively increase manpower. This format of staffing appears to work well for all the departments using it and has kept personnel expenditures from dramatically increasing while maintaining a consistent level of service in each community.

This study has identified an extensive list of Shared Services and collaborative efforts already occurring in the County between Fire Departments, as well as other agencies, to meet the safety service demand of the residents and businesses. This extensive network, mostly created through informal and collaborative effort of the Fire Chief's, has enabled Fire Departments to provide a high level and quality of service in a very cost effective manner. These efforts had an important impact on the outcome of the study.

The total revenue supporting Fire Service in Lake County in 2012 for the 14 Departments and 2 Districts is found in the table below.

<b>REVENUES</b>	<b>TOTAL</b>
<b>Property Taxes ( Fire Related)</b>	
Schedule A – Inside Millage	\$1,679,309
Schedule A- Outside Millage	\$14,536,467
<b>Subtotal</b>	\$16,215,777
<b>Other</b>	
General Fund/Income Tax	\$22,308,798
Rescue Billing/Charges for Service	\$6,789,535
Misc.	\$834,725
<b>Subtotal</b>	\$29,933,058
<b>Total Revenue</b>	\$46,148,835

The largest percentage of revenue, 48%, supporting fire service delivery in Lake County comes from the communities' general fund and income tax. Outside Millage or voter approved levies represent the second largest amount at amount at 31%.

Total expenditures on fire service in Lake County in 2012 for the 14 Departments and 2 Districts is found in the table below. It should also be mentioned that many cities provide support services such as payroll, purchasing, accounts payable and accounts receivable, and human resources to the Fire Departments and do not charge these as operational expenses thus undercounting the actual operational expense of the departments.

<b>EXPENDITURES</b>	<b>TOTAL</b>
<b>Personal Services</b>	\$29,737,488
<b>Benefits</b>	\$11,002,180
<b>Contract Services</b>	\$1,256,244
<b>Operations and Maintenance</b>	\$3,234,932
<b>Total Budgeted Operational Expenditures</b>	\$45,230,844

Personnel Services and Benefits represent 90% of the total operational expenditures. Operations and Maintenance only represents 7.2% of all expenditures. Since expenditures associated with personnel represented the largest percentage of expenditure, the Team captured the total number of personnel and promoted officers in each community. One of the objectives was to determine if the same or greater level of service could be provided at less cost as a result of consolidation it was determined that the focus of the analysis should be on Personal Services expenditures.

The Research Team evaluated all of the data obtained and the four objectives of the study to create a model to assess various feasibility options. The evaluation was broken into two parts, the identification of consolidation scenarios, and the evaluation of staffing options for each of those scenarios. The consolidation scenarios related to a one, two, and three-district layout, which would provide oversight and service to the communities within that district. The configurations of the various districts were based on reasonable logistical service territories and in some cases historic connections. The staffing options focused on the manpower levels needed to effectively and efficiently provide an optimal level of service to each District. The Team used the NFPA survey of career firefighters per 1,000 people by the size of population protected to create the number of full-time personnel needed, with the results then broken into Low, Median and High ratio categories. Since one of the key objectives is to improve the level and quality of service, the Research Team determined that creating optimal service levels within each consolidation scenario would permit a comparison with existing costs.

### Cost Comparison by District by Staffing Option

OPTIONS	2012 Personnel Service Budget	Staffing Option 1	Staffing Option 2	Staffing Option 3	Staffing Option 4
ONE DISTRICT	\$29,737,488	\$56,072,517	\$45,456,846	\$43,007,076	\$35,385,569
TWO DISTRICTS					
West	\$18,571,159	\$33,529,253	\$26,592,166	\$24,279,804	\$20,233,170
East	\$11,166,328	\$22,332,657	\$18,610,547	\$18,362,407	\$14,888,438
THREE DISTRICTS					
West	\$11,583,867	\$21,114,897	\$17,302,485	\$15,249,648	\$12,903,548
Central	\$11,400,753	\$21,440,223	\$17,739,232	\$16,590,649	\$13,527,760
East	\$6,752,867	\$13,460,864	\$11,172,517	\$11,037,909	\$8,884,171

These Staffing Options do not address each District's need for additional support personnel such as financial and purchasing support, human resources, maintenance personnel, or specialized training or education personnel. Currently many, if not all, of these support services are provided by the home community's staff that are often in other departments. Many of these costs are not currently borne by the Fire Department but are a benefit to the department as a result of their situation within the community. Therefore, additional expenses will be required in the resulting district structure to provide for each of these additional support services.

The cost of optimizing the operations regardless of the Staffing Option exceeds the current budget of expenditures on Fire Service in Lake County. Staff Option 4 is closest to the current staffing levels in many of the departments in Lake County. Even that Option exceeds current expenditure levels. The optimized Options utilize full-time personnel to fill all the positions. However, many of the Lake County Departments are using part-time personnel to meet their desired staffing needs. For example a department will identify a part-time slot in their 24 hour manning that is filled by



a firefighter/paramedic that may only work limited number of hours per month with that department. The part-time personnel may fill the entire 24-hour shift or split the hours among two or more persons. These personnel are generally cost 40% of the full-time personnel. Even assuming a percentage of the proposed full-time positions would be filled in a similar manner by part-time firefighters, there is not a significant reduction in personnel costs which would justify consolidation. As indicated above these options looked at only the staffing costs and does not take into consideration potential other savings or “economies of scale” in such items as consolidated purchasing, insurance, training costs, and equipment needs. The reduced cost saving of these items may offset some of the additional cost of consolidation.

The Lake County Fire Departments are currently operating at an efficient and effective level of service. They have creatively implemented staffing formats that use part-time personnel to maintain their communities requested level of service in a cost efficient method. They have also developed a significant network of formal and informal shared services, which permit every department to meet the safety needs of their communities. It is clear from the data that existing expenditures are far below the proposed expenditures in all three consolidation scenarios. Each scenario presented a uniform level of service delivery across the County and would increase the availability of personnel and equipment to respond to a call. However, the increase comes at a significant cost. The model used an average wage of firefighter in each district. It is reasonable to assume that existing firefighters will not take a pay cut should a consolidation occur. It is more likely that all firefighter wages will be elevated to the higher paying positions. Therefore, while the number of Administrative personnel such as a Chief will be reduced, the increased cost of personnel offset that savings. In addition, the increase in the number of personnel to provide a uniform level of service delivery also increases the required expenditure. Therefore, there does not appear to be cost savings by consolidation on the scale discussed in this feasibility study.

The Lake County Fire Consolidation Feasibility Study results revealed that countywide or large regions for consolidation do not appear to make financial sense. However, that does not mean there are not further opportunities to assist and support the continued cost effective operations of the Fire Departments in Lake County. The shared services that currently exist in Lake County are extensive and have developed through an informal network of the Lake County Fire Chiefs Association. The Chiefs are committed to meeting the needs of their service territories and have devised plans and programs to meet their objectives. They are to be commended that such an extensive network of mutual aid and programs are in place. This level of interdepartmental cooperation is not generally found in most areas of the State of Ohio or the nation without a mandate. It is this shared service base that needs to be built upon to continue to cost effectively provide Fire and EMS service to the residents of Lake County.

The Lake County Mayors and Managers Association and the Lake County Trustees Association should create an Oversight or Steering Committee to continue the discussions started by this Study. The Advisory Steering Committee created to assist in this report creation is a good basis for creating the committee. The Oversight Committee should continue to investigate mechanisms, cooperative actions, and formalizing existing shared programs to support the continued excellent delivery of Fire and EMS service in Lake County.

Lake County has a high performing and quality fire service delivery system that is exemplified by their response to the Fairport Harbor gas explosions and fires on morning of January 24, 2011. Fairport Harbor, a Village of 3109 residents in 1.04 square miles, experienced 23 structure fires and 84 incidents as a result of failures to the gas utility regulators in the Village. The response and use of the unified command system is an example of how cooperative efforts and relationships that are part of the Lake County Fire Service each and every day can also be invaluable at the time of a disaster. Chief James Powers of the City of Wickliffe describes the response as one built on the relationships and trust at the Chief's level along with automatic aid and subsequent box alarm system which most likely saved many houses from being destroyed. If this system had not been in place, the Fairport Harbor Fire Department would have had to call for help once they arrived on scene. This would have been an overwhelming task to coordinate the response for 29 departments by looking at a map instead of a prearranged order as developed through the County's box alarm system. The auto aid and box alarm system saved valuable time in getting those departments to the scene of these multiple fires.

The relationship that the Chiefs have developed further assisted with the knowledge that those incoming Chief's thought of Fairport Harbor as their community, assisted Chief Hogya in the suppression and management efforts. Chief Hogya had stated that he had "complete trust in those Chiefs running his districts and knew those Chief's would treat his residents well."

Managing large-scale incidents such as this one is not uncommon for Lake County's Fire Service. At each incident in the county, personnel learn from challenges and work to improve the overall response of the county while maintaining their own autonomy as their community's fire service.

## INTRODUCTION

This is the report of the Consolidation of the Lake County Fire Departments Feasibility Study grant project, which was funded by the State of Ohio Local Government Innovations Fund (LGIF) Program. The project tests the feasibility of consolidation of the fourteen (14) municipal Fire Departments and the two (2) Fire Districts into a single (or up to three (3)) consolidated Fire Districts to improve service at a reduced cost.

By definition, a feasibility study is “*an evaluation and analysis of the potential of a proposed project, idea, or concept, which is based on extensive investigation and research to support the process of decision-making.*”<sup>1</sup> Feasibility studies fall along a continuum. On one end is a study that searches for an “all or nothing” conclusion, which means the concept tested is or is not feasible without modification. On other end of the continuum is a study that searches for a conclusion based upon arrayed or defined options. The Lake County Fire Departments feasibility study falls into the second category; that is the study aims to identify an option that could be feasible for adoption and implementation. In any case, the conclusion whether something is or is not feasible is unknown until after the study has been completed.

The Feasibility Study is supported by a Grant from the Local Government Innovations Fund from the State of Ohio Department of Development Services. The application was supported by the Lake County Mayors and Managers Association which represents the 18 City and Villages and the Lake County Township Association which represents the 5 Township governments. The City of Mentor on the Lake was chosen as the lead entity and fiscal agent on the project. Mentor-on-the-Lake entered into contracts with the Research Team. This report is prepared by a team of researchers, which included Aislinn Consulting, LLC, Cleveland State University Levin College of Urban Affairs’ Center for Emergency Preparedness, P3 Development Advisors, LLC, and James M. Lyons, Attorney. Director Bernard W. Becker III of Cleveland State University provided the technical Fire / EMS expertise; Paul Komlosi and James Lyons provided the financial and legal expertise respectively. Rita McMahon of Aislinn Consulting, LLC coordinated the project and crafted this report from the inputs from all members of the team.

The grant funds were designated for use in Lake County, Ohio to test the feasibility of consolidating the fourteen (14) Fire Departments and two (2) Fire District into a single or several districts. It is also to explore if a partnership of shared fire department services and equipment will result in efficiencies that reduce the overall cost while maintaining or improving services. To assist the Research Team in this effort, an Advisory Steering Committee was formed. The Advisory Steering Committee included representatives of the two (2) supporting entities; the Lake County Mayor and Managers Association and the Lake County Township Trustees Association as well as two (2) representatives of the Lake County Fire Chiefs. This Committee met with the Research Team to discuss options, data collection, and evaluate the proposals for consolidation. They provided valuable insight into the existing workings of the Lake County fire community.

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<sup>1</sup> Feasibility Study defined on Wikipedia at :<http://en.wikipedia.org/wiki/feasibility.study>

### **Feasibility Study Project Purpose and Objectives**

The purpose of the study was to determine if a consolidated organizational structure reduced administrative costs and could improve efficiencies in organizational operation therefore reducing cost of overall operations.

There were several objectives of the study:

- Expand the opportunity for improved level and quality of service provided
- Reduce overall costs of service
- Identify advantages and disadvantages of creating one or more districts for fire service
- Explore expanded shared services and equipment

The following assumptions were made going into the study:

- The study gathered various items related to each departments' operations, level of service and response time, no evaluation of each individual's departments effectiveness was determine.
- It was assumed that each community had determined that the current level of service and its manpower level currently being provided was acceptable.
- It was assumed that changes to administrative structure would not immediately affect the level of service each community currently provided.
- Station locations were not analyzed but assumed to be appropriate to continue each communities same level of service.

The data collected was for the base year of 2012. This was the year at the beginning of the study that the most complete data was available. While changes have occurred since the study began the analysis is based on the one year of data to maintain consistency among all data sets.

### **Project Deliverables**

The project deliverables are the final version of this report, which includes the various options considered in the feasibility analysis and a summary of the next steps that should be considered.

### **Project Scope and Methodology**

The project methodology combined the following elements:

- **Research Team Formation:** Which was formed to assemble technical skills necessary to collect data, evaluate information and identify option for the feasibility study.
- **Advisory Steering Committee Formation:** The Committee was formed by one representative of each of the sponsoring entities: Lake County Mayors and Manager's Association, the Lake County Trustees Association. Two representatives were appointed by the Lake County Fire Chief's Association. The committee's purpose was to provide input into the process and methodology and to provide comment and input into the feasibility options selected by the Research Team.
- **Demographic Analysis:** Used to understand existing community conditions in Lake County.
- **Fire Department Analysis:** Data was collected on each existing fire department and district to establish current operational, manpower and service levels. Appendix A includes the original request for data submitted to all fire departments in September of 2013.

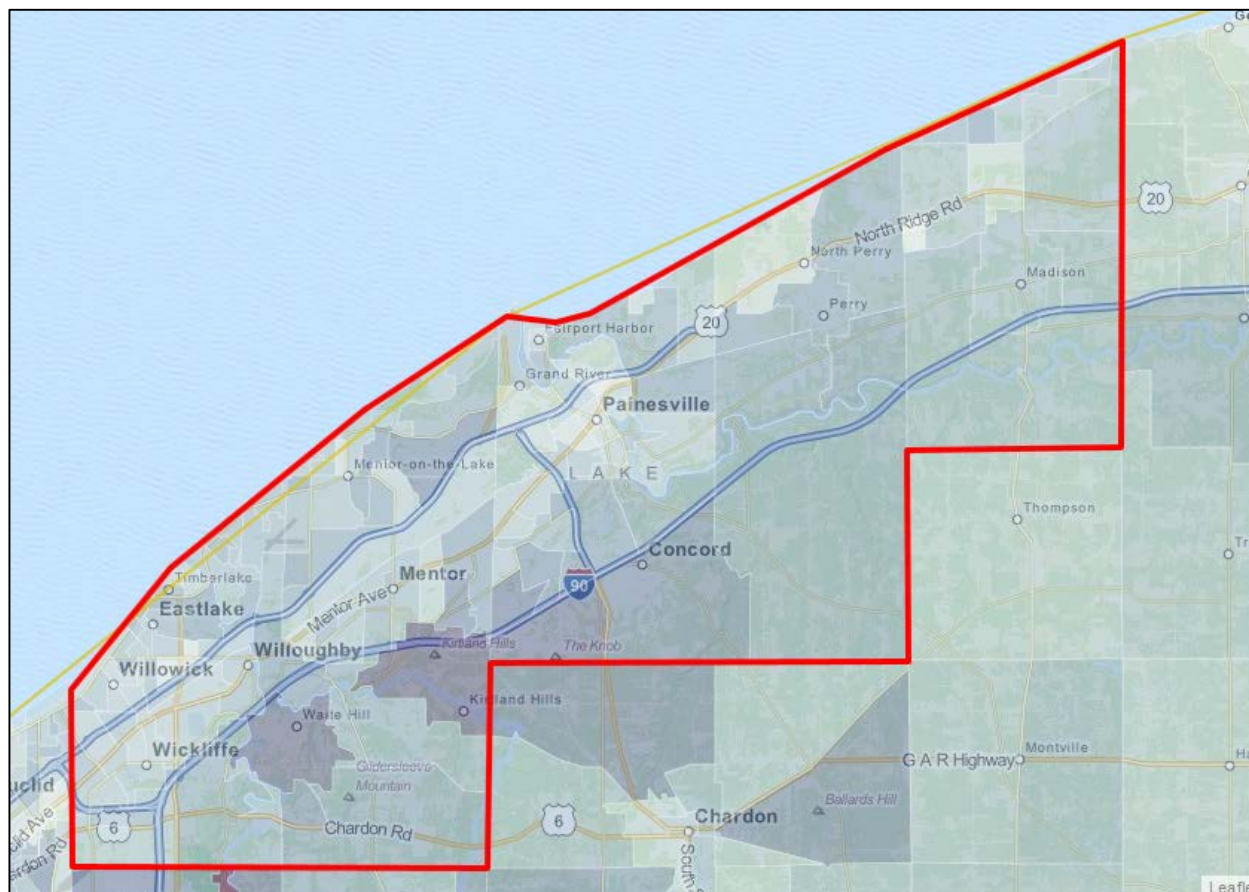
- **Fiscal Conditions Analysis:** Provided a baseline on the financial position of the collaborative partners and the sources of revenue and expenditures for each fire department and district. A review of all levies, EMS funds, and general fund contributions to support the fire service delivery was evaluated. The base year of 2012 was chosen at the beginning of the study since it was the fiscal year that complete data was determined to be available.
- **Legal Analysis:** An analysis of the legal basis for the establishment of fire departments in the State of Ohio and the individual communities was conducted. Additionally, any collective bargaining agreements were reviewed. Various legal frameworks for consolidated or combined departments were also analyzed.
- **Existing Shared Services documentation:** The Research Team was made aware that extensive shared services and participation by fire departments already occurs in Lake County. The Fire Chief's Association provided a summary list of all the ongoing and past collaborations.
- **Consolidated Fire Department design:** Several options for consolidation were considered and evaluated based on the data obtained from the existing departments, review of successful consolidations and the standards established by NFPA.
- **Consolidation Feasibility Assessment:** Tested the feasibility of creating a consolidated fire department in Lake County.

## CHALLENGES:

There were several challenges in completing this report. Most significantly was the lack of a consistent method of recording and maintaining data among the communities. This applied not only to the fire departments but to the financial reporting methods. This made data collection difficult and often impossible to obtain an accurate comparison of the data. The size of the community and its staff affected the detail to which data was maintained and their ability to respond to requests for information. The lack of consistent data forced the Research Team to focus on broad management issues and organizational structures.



## LAKE COUNTY



Lake County is located east of the City of Cleveland on the shores of Lake Erie. It is the smallest county in area in the State of Ohio, but ranks 11<sup>th</sup> in population. The County is largely classified as urban but has a distinct rural character in the eastern portion of the County. The County is divided into 23 political subdivisions including 18 municipalities and villages and 5 townships. The County, established in 1840 from portions of Geauga and Cuyahoga Counties, was rural and the home to many nursery and vineyards until the mid-twentieth century when growth and expansion from adjacent Cuyahoga County resulted in a population boom and the creation of many of the communities that exist today. As each community was incorporated, it established the services that its residents and businesses desired within their own boundaries. As a result, today there are 14 individual Fire Departments and 2 Fire Districts serving the County.

Lake County has several sites that are considered high hazard, such as the Perry Nuclear Power plant, and numerous chemical production facilities. Additionally there are natural conditions that affect the communities. There are two major rivers that run north/south through the county, both of which have experienced significant flooding and threatened lives and property. There are steep cliffs and deep ravines as well as 30 miles of Lake Erie shore line that present potential dangerous situations.

As the home to the Perry Nuclear Power Plant, Lake County Commissioner in cooperation with then owner Cleveland Electric Illuminating Company (CEI), established and expanded the Emergency Management Agency for the county. Since 1987, the Emergency Management Agency has assisted "...communities by coordinating and integrating all activities necessary to build, sustain, and improve the capability to mitigate against, prepare for, respond to, and recover from threatened or actual natural disasters, acts of terrorism, or other man-made disasters."<sup>2</sup> Originally supported extensively by CEI the agency has created a framework for ongoing collaborations and support of the delivery of Fire service in Lake County. As a result, Lake County was an early adopter of an interoperable radio system countywide as well as countywide haz-mat teams. The construction of the Perry Nuclear Power Plant laid the foundation for much of the collaboration experienced today.

### Lake County Statistics<sup>3</sup>

County population in 2012: 229,582 (93% urban, 7% rural); it was 229,582 in 2012 estimate  
Land area: 228 sq. mi.

Water area: 750.7 sq. mi.

Population density: 1007 people per square mile

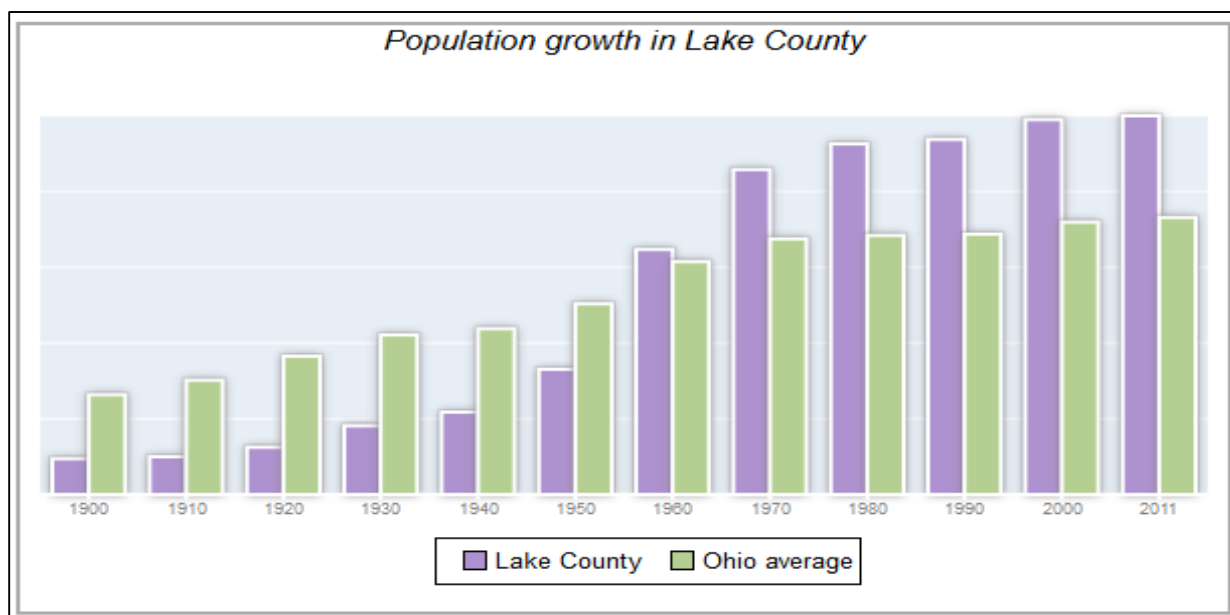
Mar. 2012 cost of living index in Lake County: 95.9 (near average, U.S. average is 100)

Median resident age: 42.0 years

Ohio median age: 38.0 years

Males: 112,143 (48.0%)

Females: 117,898 (52.0%)



<sup>2</sup> Lake County EMA Mission Statement at <http://lakecountyohio.gov/ema/home.aspx>

<sup>3</sup> US Census Bureau quick facts 2012

## Historical Natural Disaster Information<sup>4</sup>

Lake County has not been without its share of natural and manmade disasters. The following is a list of various disasters over the last 50 years. Understanding this information is important to understanding the demands on the fire service. Fire Departments play a critical and often pivotal role in response to these events.

### **Tornado activity:**

Lake County historical area-adjusted tornado activity is significantly below Ohio state average. It is 7.9 times below overall U.S. average.

Tornadoes in this county have caused 40 injuries recorded between 1950 and 2004.

On 7/4/1969, a category 2 (max. wind speeds 113-157 mph) tornado injured 40 people and caused between \$50,000 and \$500,000 in damages.

### **Earthquake activity:**

Lake County-area historical earthquake activity is significantly above Ohio state average. It is 35% smaller than the overall U.S. average.

On 9/25/1998 at 19:52:52, a magnitude 5.2 (4.8 MB, 4.3 MS, 5.2 LG, 4.5 MW, Depth: 3.1 mi, Class: Moderate, Intensity: VI - VII) earthquake occurred 49.0 miles away from the county center

On 1/31/1986 at 16:46:43, a magnitude 5.0 (5.0 MB) earthquake occurred 9.7 miles away from the county center

On 1/26/2001 at 03:03:20, a magnitude 4.4 (3.9 MB, 4.4 LG, 4.3 LG, Depth: 3.1 mi, Class: Light, Intensity: IV - V) earthquake occurred 31.1 miles away from the county center

On 6/20/2006 at 20:11:18, a magnitude 3.8 (3.5 MW, 3.8 LG, Depth: 3.1 mi, Class: Light, Intensity: II - III) earthquake occurred 10.8 miles away from Lake County center

On 3/12/2007 at 23:18:16, a magnitude 3.7 (3.7 LG, 3.6 LG, Depth: 3.1 mi) earthquake occurred 28.9 miles away from the county center

On 6/30/2003 at 19:21:17, a magnitude 3.6 (3.6 LG, 3.4 LG, Depth: 2.9 mi) earthquake occurred 9.1 miles away from the county center

*Magnitude types: regional Lg-wave magnitude (LG), body-wave magnitude (MB), surface-wave magnitude (MS), moment magnitude (MW)*

### **Most recent natural disasters:**

Ohio Hurricane Sandy, Incident Period October 29, 2012 to October 30 2012 Major Disaster Declared (DR-4098): January 3, 2013, FEMA ID: FEMA-DR-4098, Natural Disaster Type: Storm, Flood.

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<sup>4</sup> Historical Natural Disaster FEMA.gov/disasters



Ohio Snow, Incident Period: March 7, 2008 to March 9, 2008, Emergency Declared (EM-3286): April 24, 2008, FEMA Id: FEMA-EM-3286, Natural disaster type: Snow

Ohio Severe Storms, Straight Line Winds, and Flooding, Incident Period: July 27, 2006 to August 4, 2006, Major Disaster (Presidential) Declared (DR-1656): August 1, 2006, FEMA Id: FEMA-DR-1656, Natural disaster type: Storm, Flood, Wind

Ohio Hurricane Katrina Evacuation, Incident Period: August 29, 2005 to October 1, 2005, Emergency Declared (EM-3250): September 13, 2005, FEMA Id: FEMA-EM-3250, Natural disaster type: Hurricane

Ohio Power Outage, Incident Period: August 14, 2003 to August 17, 2003, Emergency Declared (EM-3187): September 23, 2003, FEMA Id: FEMA-EM-3187, Natural disaster type: Power Outage

Ohio SEVERE STORMS, FLOODING, Incident Period: May 23, 1989 to June 26, 1989, Major Disaster (Presidential) Declared (DR-831): June 10, 1989, FEMA Id: FEMA-DR-831, Natural disaster type: Storm, Flood

Ohio Blizzards and Snowstorms, Incident Period: January 26, 1978, Emergency Declared (EM-3055): January 26, 1978, FEMA Id: FEMA-EM-3055, Natural disaster type: Snowstorm, Blizzard

Ohio Winds, Tornadoes, Heavy Rains, Flooding, Incident Period: September 11, 1975, Major Disaster (Presidential) Declared (DR-480): September 11, 1975, FEMA Id: FEMA-DR-480, Natural disaster type: Tornado, Flood, Wind, Heavy Rain

Ohio SEVERE STORMS, FLOODING, Incident Period: April 27, 1973, Major Disaster (Presidential) Declared (DR-377): April 27, 1973, FEMA Id: FEMA-DR-377, Natural disaster type: Storm, Flood

Ohio SEVERE STORMS, FLOODING, Incident Period: November 24, 1972, Major Disaster (Presidential) Declared (DR-362): November 24, 1972, FEMA Id: FEMA-DR-362, Natural disaster type: Storm, Flood

Ohio Tropical Storm Agnes, Incident Period: July 19, 1972, Major Disaster (Presidential) Declared (DR-345): July 19, 1972, FEMA Id: FEMA-DR-345, Natural disaster type: Tropical Storm

One other natural disasters have been reported since 1953.

The number of natural disasters in Lake County (11) is near the US average (12).

Major Disasters (Presidential) Declared: 7

Emergencies Declared: 4

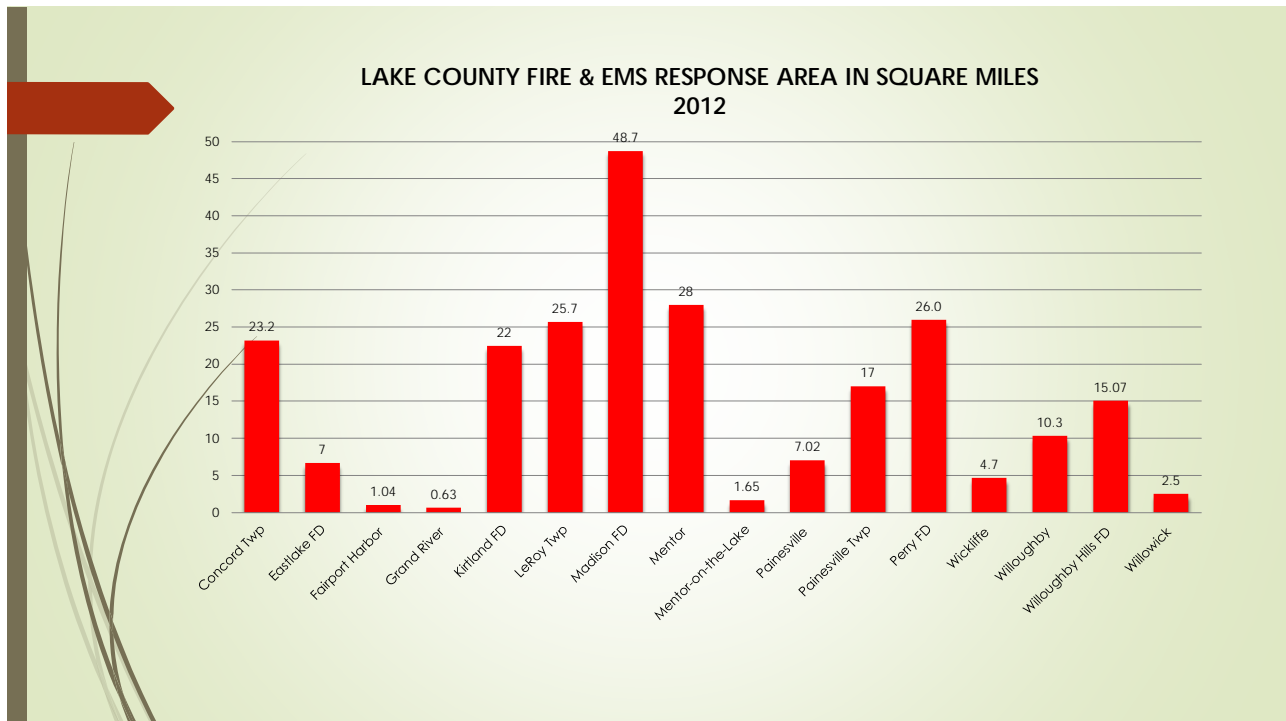
Causes of natural disasters: Floods: 7, Storms: 6, Winds: 2, Blizzard: 1, Heavy Rain: 1, Tornado: 1, Hurricane: 1, Power Outage: 1, Snow: 1, Snowstorm: 1, Tornado: 1, Tropical Storm: 1 (Note: Some incidents may be assigned to more than one category).

## LAKE COUNTY FIRE DEPARTMENTS

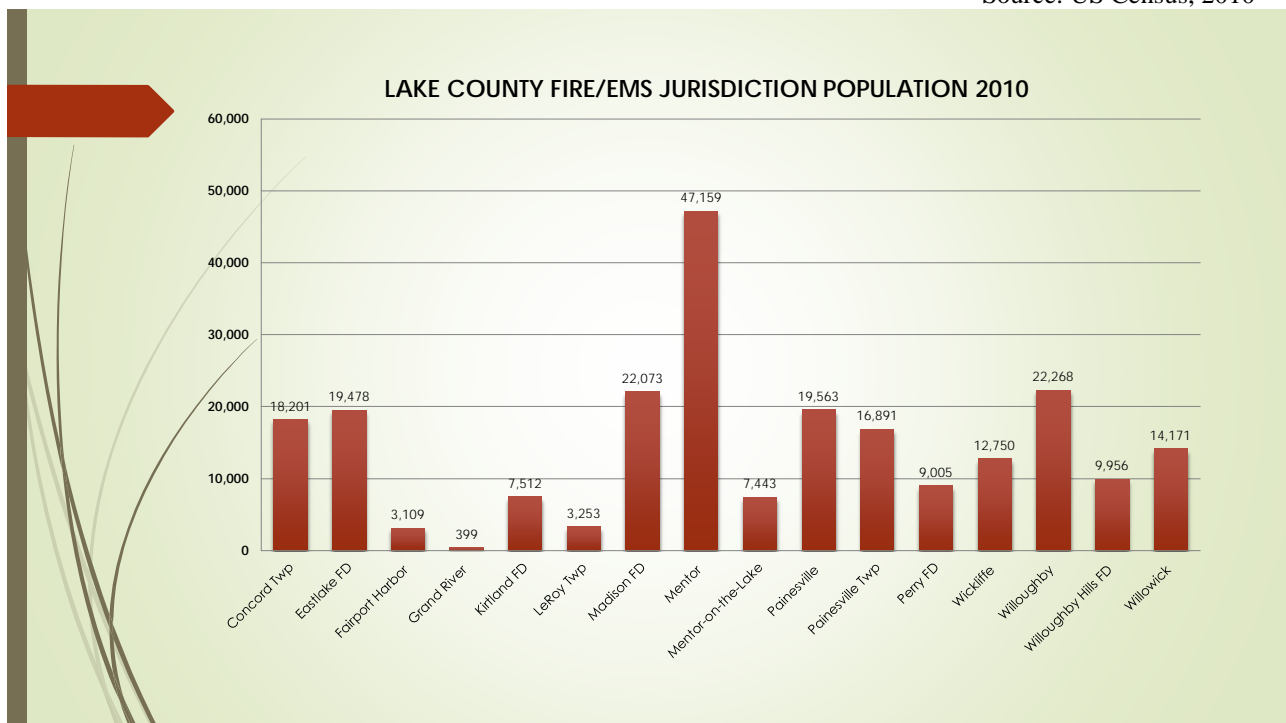
Since there are only 16 Fire entities yet 23 political subdivisions, there are several departments that provide service to more than just one community. A list of the Fire Departments and the area they serve in 2012 is listed below.

DEPARTMENT OR DISTRICT	SERVICE TERRITORY
Concord Township Fire Department	Concord Township
Eastlake Fire Department	Eastlake City, Village of Lakeline and Village of Timberlake
Fairport Harbor Fire Department	Village of Fairport Harbor
Grand River Fire Department	Village of Grand River
Kirtland Fire Department	Kirtland City, Village of Kirtland Hills
Leroy Township Fire Department	Leroy Township
Madison Fire District	Madison Township and Village of Madison
Mentor Fire Department	Mentor City
Mentor-on-the-Lake Fire Department	Mentor-on-the-Lake City
Painesville City Fire Department	Painesville City
Painesville Township Fire Department	Painesville Township, Grand River Village
Perry Fire District	Perry Township, Perry Village and North Perry Village
Wickliffe Fire Department	Wickliffe City
Willoughby Fire Department	Willoughby City
Willoughby Hills Fire Department	Willoughby Hills City and Village of Waite Hills
Willowick Fire Department	Willowick City

The following tables describe the service territory in area and population served.



Source: US Census, 2010

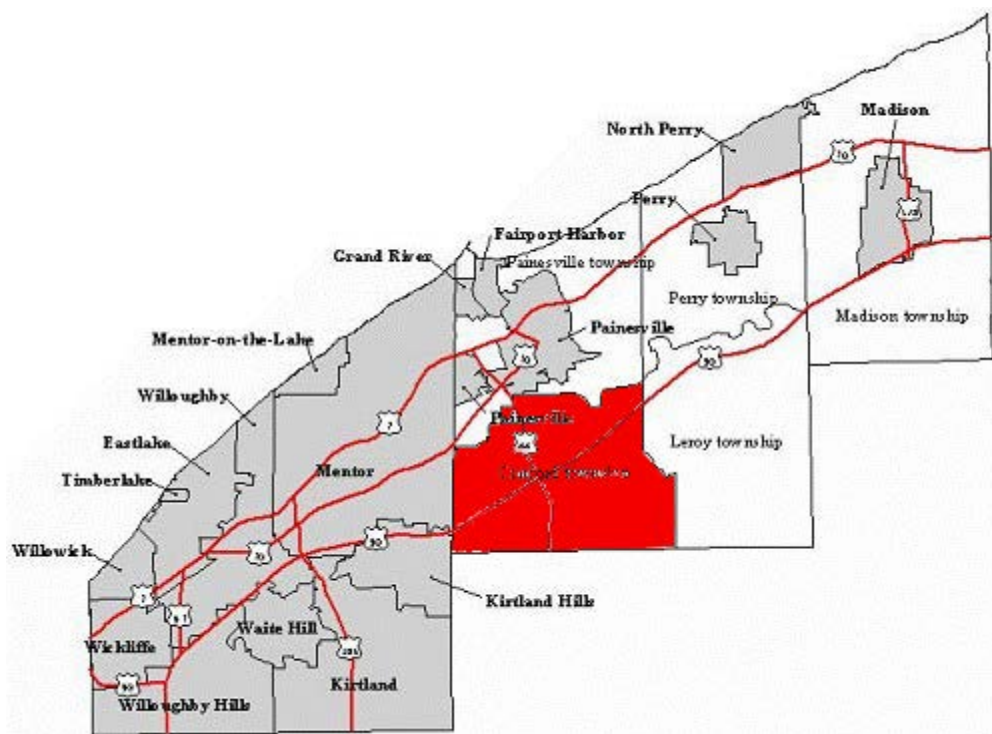


Source: US Census, 2010

## Description of Departments

The following is a brief description of each department in 2012, which was the base year for the collection of all data and information. This data is from the survey completed by each Department. It is recognized that during the intervening years that several changes have occurred to either personnel or equipment or even the service territories of the departments. However, the 2012 data is being used for comparison and the research team did not believe that the subsequent changes will materially affect the outcome of the feasibility study.

## CONCORD TOWNSHIP



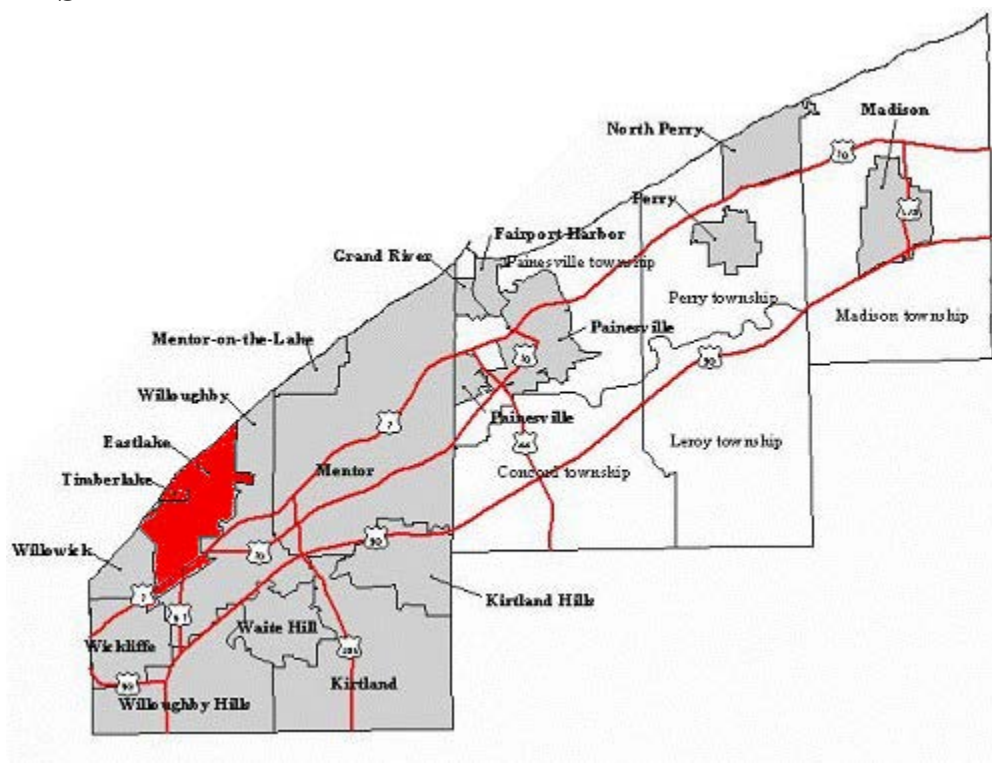
Concord Township Fire Department was founded in 1948 and provides service to Concord Township's 18,201 residents and businesses located in 23.2 square miles. The Fire Department consists of 1 Chief, 17 Full-time career firefighters (1 Deputy Chief, 3 Lieutenants, 12 firefighters) and 45 Part-time firefighters with additional administrative and support staff. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team and Tech Rescue Team. The Department is a participant in the East End Fire Chiefs Auto Aid Agreement and a member of the Eastern Lake County COG.

In 2012, the Department reported it responded to 1910 requests for service:

<b>Breakdown</b>	<b>Number</b>	<b>Percentage of calls</b>
FIRE:	122	6.4
EMS:	950	49.7
OTHER:	838	43.9

The department operates out of two stations and has 4 Engines, 1 Ladder shared with Painesville City Fire, 3 EMS units and several support vehicles.

## EASTLAKE



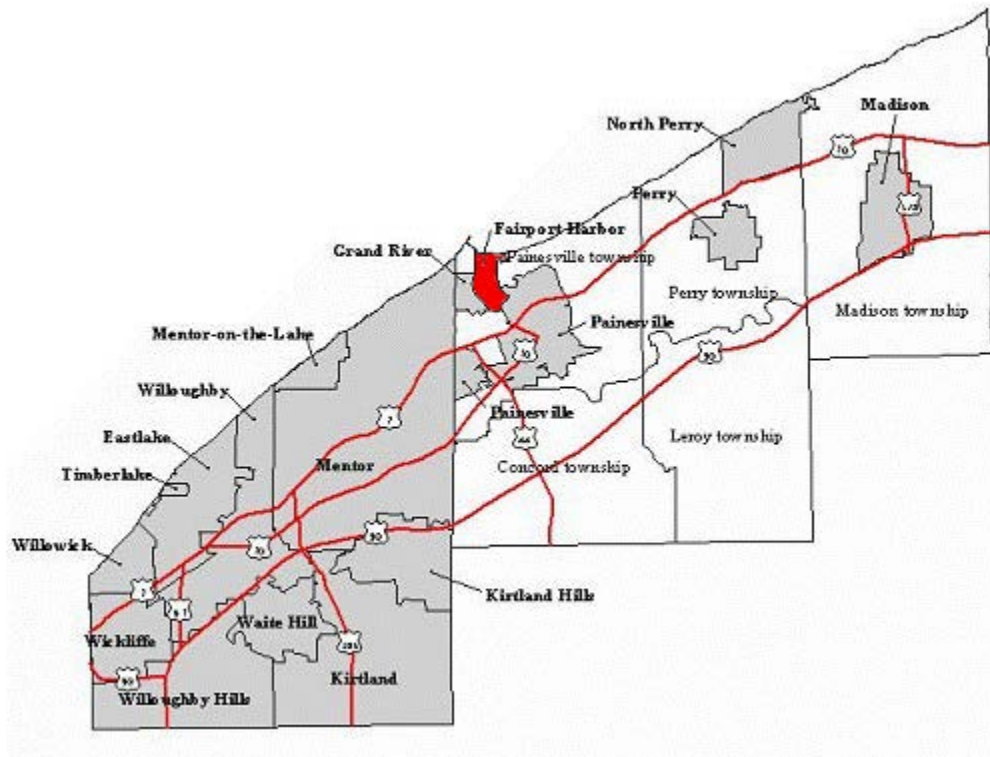
Eastlake Fire Department was founded in 1949 and provides service to Eastlake and the Villages of Timberlake and Lakeline in 2012. There are 19,478 residents and businesses located in 6.7 square miles. The Fire Department consists of 1 Chief, 25 Full-time career firefighters (3 Battalion Chiefs, 3 Lieutenants, 1 Fire Marshall, 18 firefighters) with additional administrative and support staff. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team, Water Rescue, The West Lake County Investigation Team, and Tech Rescue Team. The Department provides significant Public Education.

In 2012, the Department reported it responded to 2880 requests for service:

Breakdown	Number	Percentage of calls
FIRE:	551	19.1
EMS:	2056	71.4
OTHER:	273	9.5

The department operates out of one station and has 3 Engines, 1 Ladder, 5 EMS units and several support and staff vehicles including 1 trailer.

## FAIRPORT HARBOR



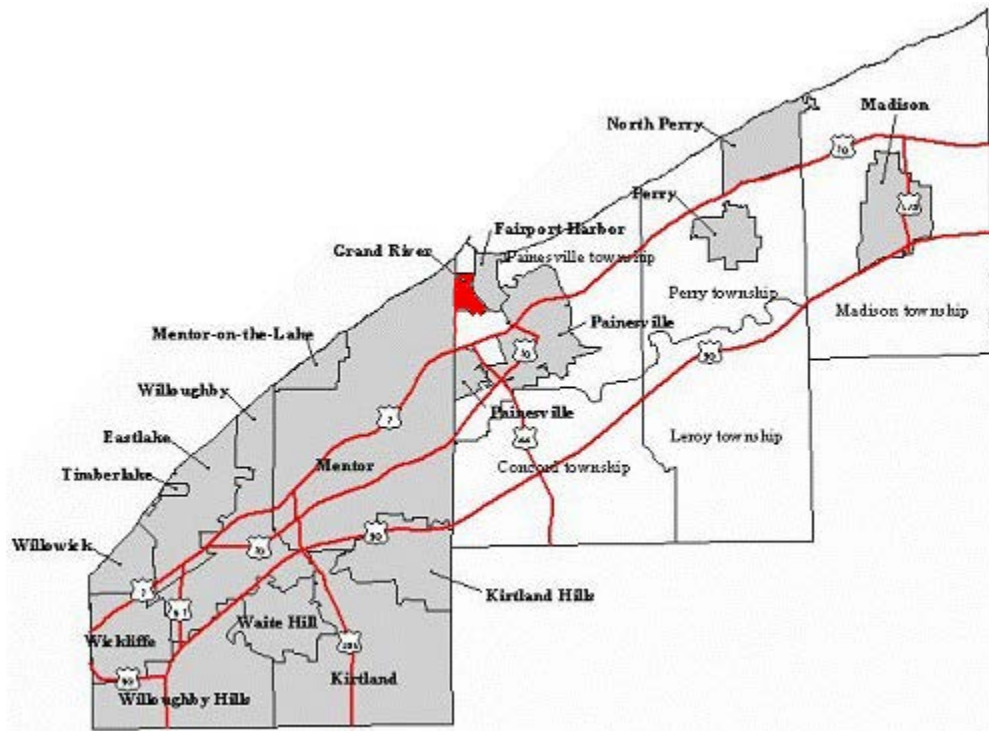
Fairport Harbor Fire Department was founded in 1891 and provides service to The Village of Fairport Harbor's 3109 residents and businesses located in 1.04 square miles. The Fire Department consists of 1 Part-time Chief, 9 Part-time firefighters, 2 Full-time and 1 Part-time Captains, 1 Full-time and 1 Part-time Lieutenants. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team and Tech Rescue Team. The Department is a participant in the East End Fire Chiefs Auto Aid Agreement and a member of the Eastern Lake County COG.

In 2012, the Department reported it responded to 765 requests for service.

The department operates out of one station and has 2 Engines, 2 EMS units and several support and staff vehicles.



## GRAND RIVER



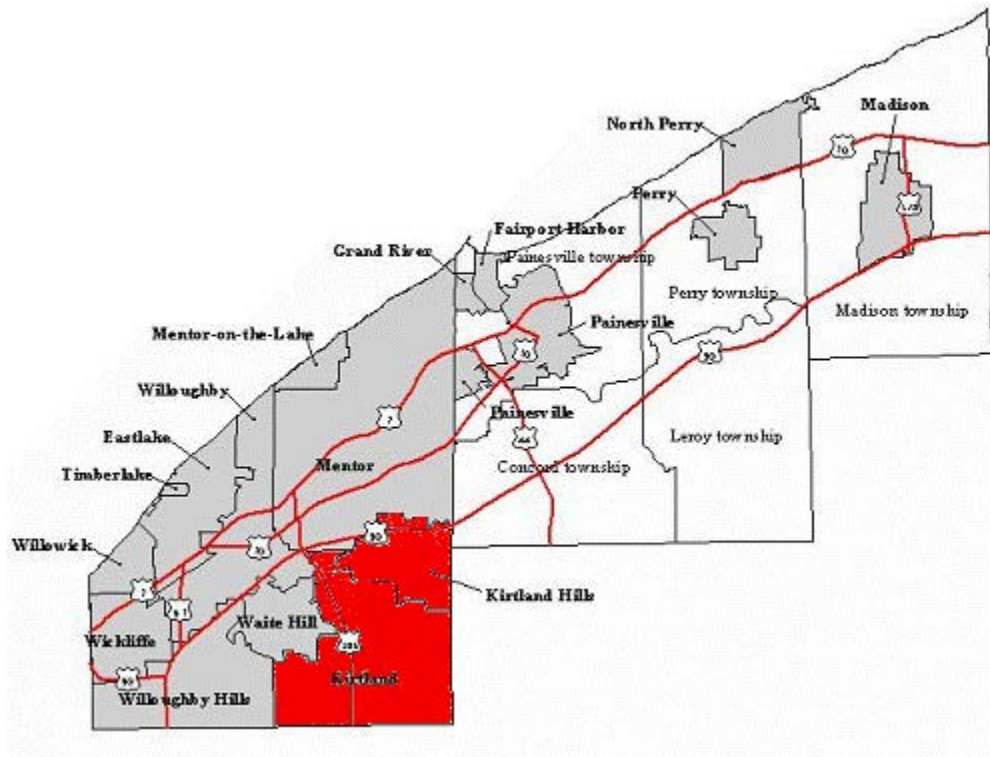
Grand River Fire Department provides service to the Village of Grand River's 399 residents and businesses located in .63 square miles. The Fire Department consists of 1 Part-time Chief, 4 Part-time Lieutenants and 14 Part-time firefighters. Grand River Fire Department receives some support in personnel and service from the Painesville Township Fire Department. The department provides both Fire and EMS service. The Department is a participant in the East End Fire Chiefs Auto Aid Agreement and a member of the Eastern Lake County COG.

In 2012, the Department reported it responded to 294 requests for service:

Breakdown	Number	Percentage of calls
FIRE:	135	45.9
EMS:	159	54.1
OTHER:	N/A	

The department operates out of one station and has 1 Engine, and 1 EMS unit.

## KIRTLAND



Kirtland City Fire Department was founded in 1931 and provides service to 7512 residents and businesses of Kirtland City and the Village of Kirtland Hills. The Fire Department covers 22.45 square miles. The Fire Department consists has 39 employees, 1 Chief, 9 Full-time career firefighters (3 Captains, and 6 firefighters) and 2 Part-time Lieutenants and 26 Part-time firefighters with additional administrative and support staff. The department provides both Fire and EMS service. The Department follows mutual aid agreements and Ohio Fire Chiefs program.

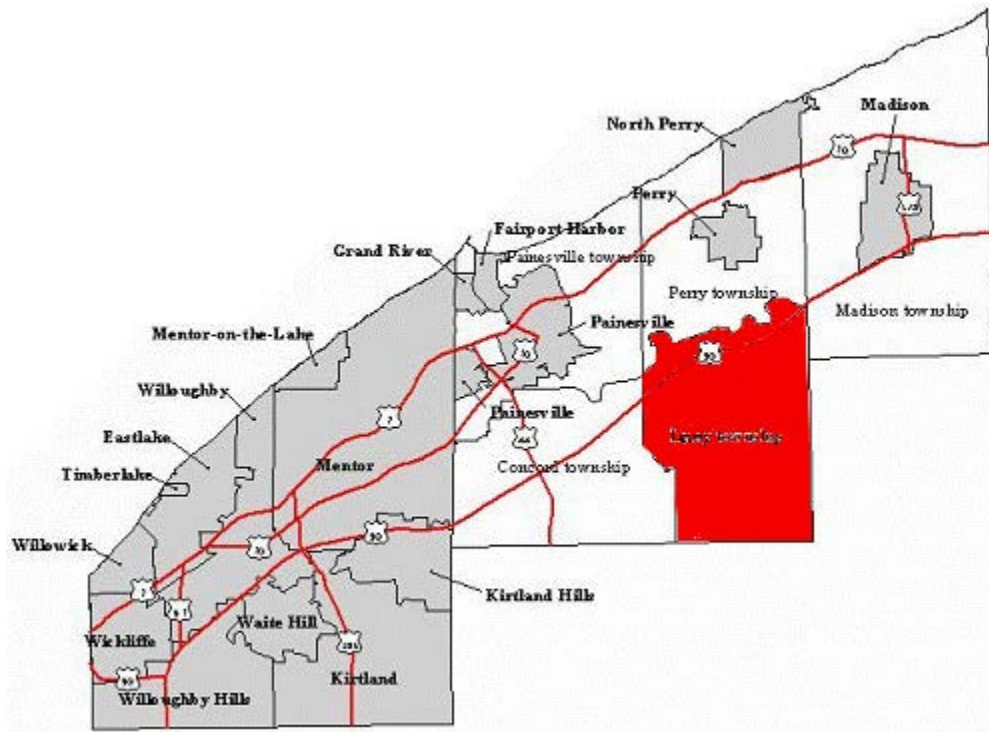
In 2012, the Department reported it responded to 1049 requests for service:

<b>Breakdown</b>	<b>Number</b>	<b>Percentage of calls</b>
FIRE:	46	4.4
EMS:	685	65.3
OTHER:	318	30.3

The department operates out of two stations and has 3 Engines, 3 EMS units and several support and staff vehicles.



## LEROY TOWNSHIP



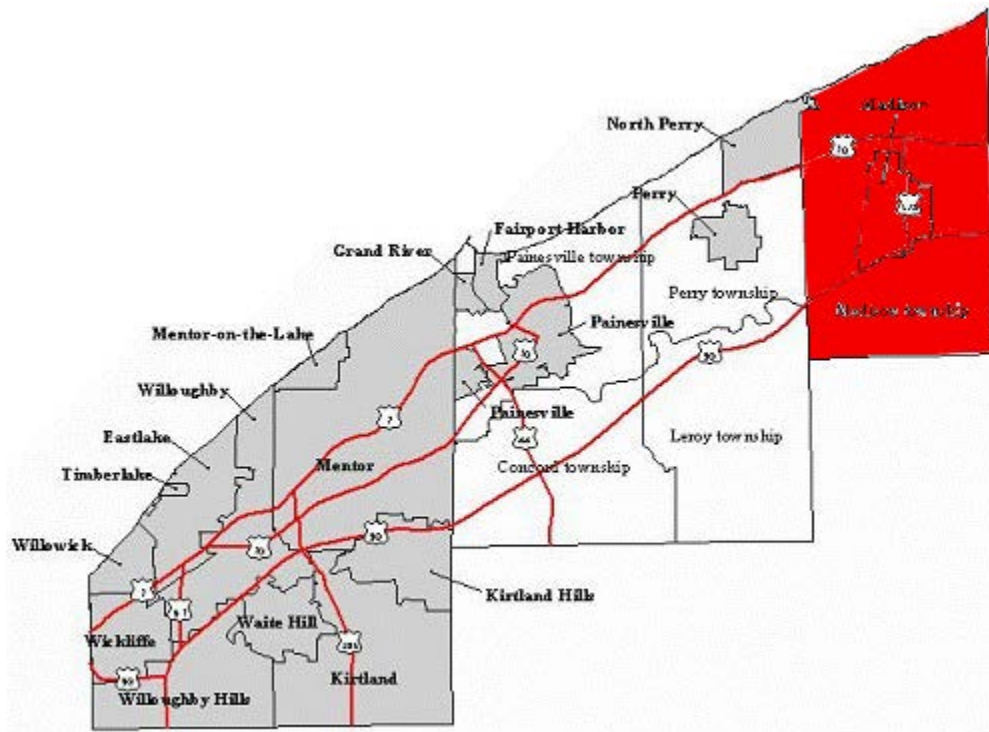
Leroy Township Fire Department was founded in 1953 and provides service to Leroy Township's 3253 residents and businesses located in 25.7 square miles. The Fire Department consists of 1 Part-time Chief, and 28 Part-time firefighters. The department provides both Fire and EMS. The Department is a participant in the East End Fire Chiefs Auto Aid Agreement and a member of the Eastern Lake County COG.

In 2012, the Department reported it responded to 515 requests for service:

<b>Breakdown</b>	<b>Number</b>	<b>Percentage of calls</b>
FIRE:	11	2.1
EMS:	199	38.6
OTHER:	305	59.3

The department operates out of one station and has 2 Engines, 1 water tender, 2 EMS units and several support and staff vehicles.

## MADISON FIRE DISTRICT



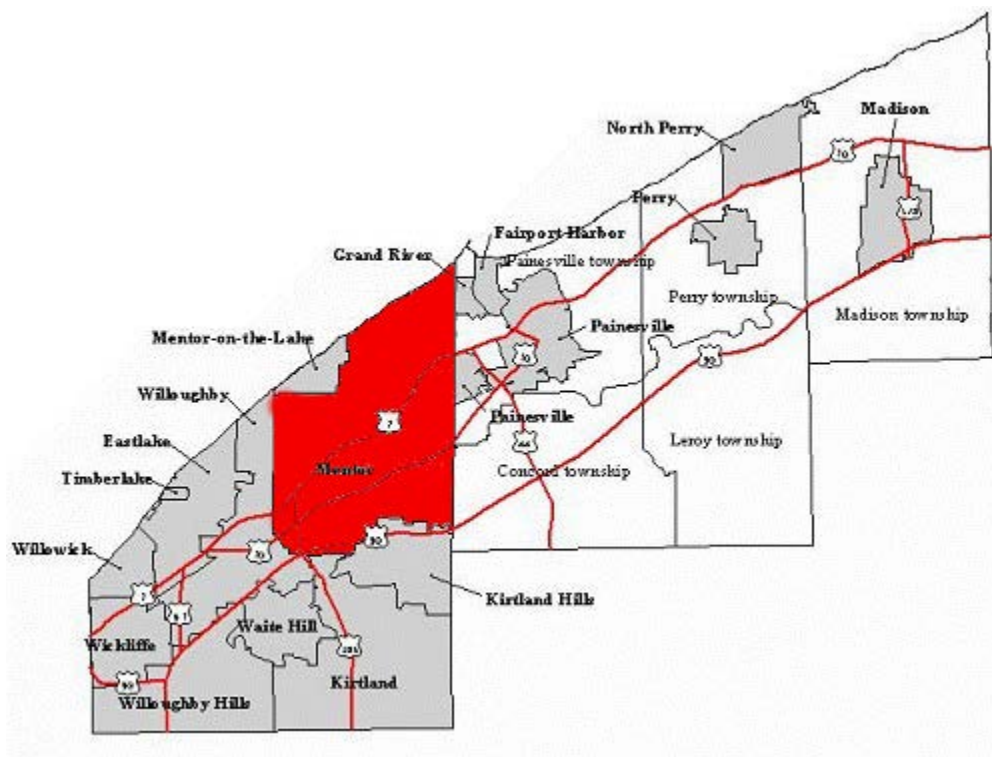
Madison Fire District is one of two (2) Districts in the County. It provides Fire and EMS service to Madison Township and the Village of Madison's 22,073 residents and businesses. The Fire Department covers 48.7 square miles. The District, founded in 1971, consists of 1 Chief, 6 Lieutenants, 6 Full-time firefighters and 42 part-time firefighters. The department provides both Fire and EMS service as well as participation in the Lake Co Fire Investigation Unit, HazMat and Technical Rescue. The Department is a participant in the East End Fire Chiefs Auto Aid Agreement and a member of the Eastern Lake County COG.

In 2012, the Department reported it responded to 4036 requests for service:

<b>Breakdown</b>	<b>Number</b>	<b>Percentage of calls</b>
FIRE:	107	2.7
EMS:	1958	48.5
OTHER:	1971	48.8

The department operates out of three stations and has 3 Engines, 6 EMS units and several support and staff vehicles. The department recently acquired a ladder truck that is share with Perry Fire District.

## MENTOR



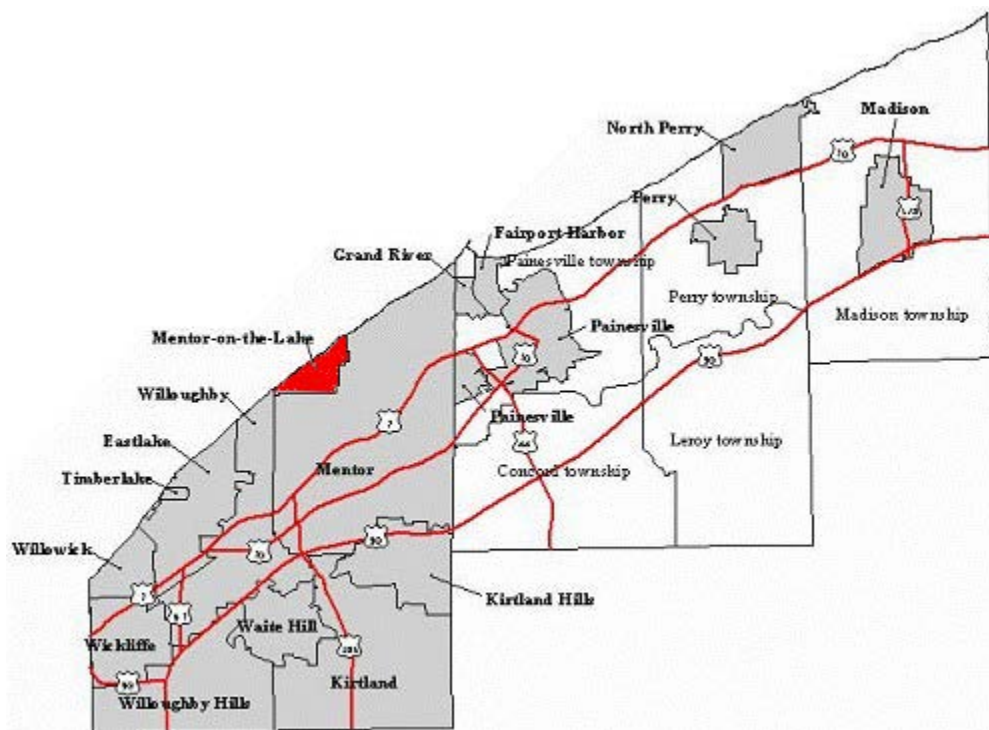
Mentor City Fire Department was founded in 1921 and provides service to Lake County's largest community of 47,159 residents and extensive business community located in 28 square miles. The Fire Department consists of 1 Chief, 71 Full-time career firefighters (2 Deputy Chiefs, 3 Battalion Chiefs, 16 Lieutenants, 49 firefighters) and 42 Part-time firefighters with additional administrative and support staff. The department provides both Fire and EMS service as well as the following Specialized Activities; Dive Team, Fit, Police/Fire Bomb Squad, Trench/Building Collapse Rescue, Ohio Regional VSAR, Water Safety Education, Fire Safety House, Gandy TV and medical trailers.

In 2012, the Department reported it responded to 7264 requests for service:

<b>Breakdown</b>	<b>Number</b>	<b>Percentage of calls</b>
FIRE:	1942	26.7
EMS:	5322	73.3
OTHER:	N/A	

The department operates out of five stations and has 8 Engines, 2 Ladders, 8 EMS units and numerous support and staff vehicles.

## MENTOR-ON-THE-LAKE



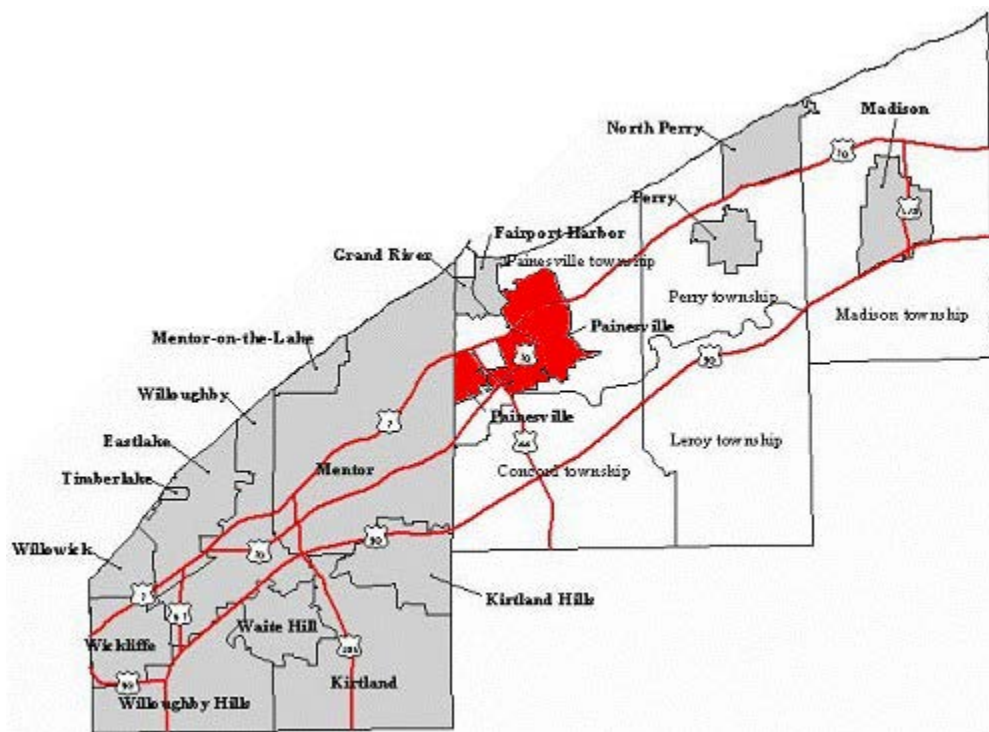
Mentor-on-the-Lake City Fire Department was founded in 1932 and provides service to the City of Mentor-on-the-Lake's 7443 residents and businesses located in 1.65 square miles. The Fire Department consists of 1 Chief, 1 Lieutenants, 2 Full-time firefighters and 25 Part-time firefighters. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team and the West Lake County FIU. The Department has an automatic response agreement with the City of Willoughby Fire Department.

In 2012, the Department reported it responded to 1047 requests for service:

Breakdown	Number	Percentage of calls
FIRE:	151	14.4
EMS:	896	85.6
OTHER:	N/A	

The department operates out of one station and has 1 Engines, 1 Water Tender, 2 EMS units and several support and staff vehicles.

## PAINESVILLE CITY



Painesville City Fire Department was founded in 1841 and is the oldest continuous operating department in the County. It provides service to Painesville City's 19,563 residents and businesses located in 7.02 square miles. The Fire Department consists of 1 Chief, 25 Full-time career firefighters (3 Captains, 3 Lieutenants, 19 firefighters) and 9 Part-time firefighters with additional administrative and support staff. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team and Tech Rescue Team. The Department is a participant in the East End Fire Chiefs Auto Aid Agreement and a member of the Eastern Lake County COG.

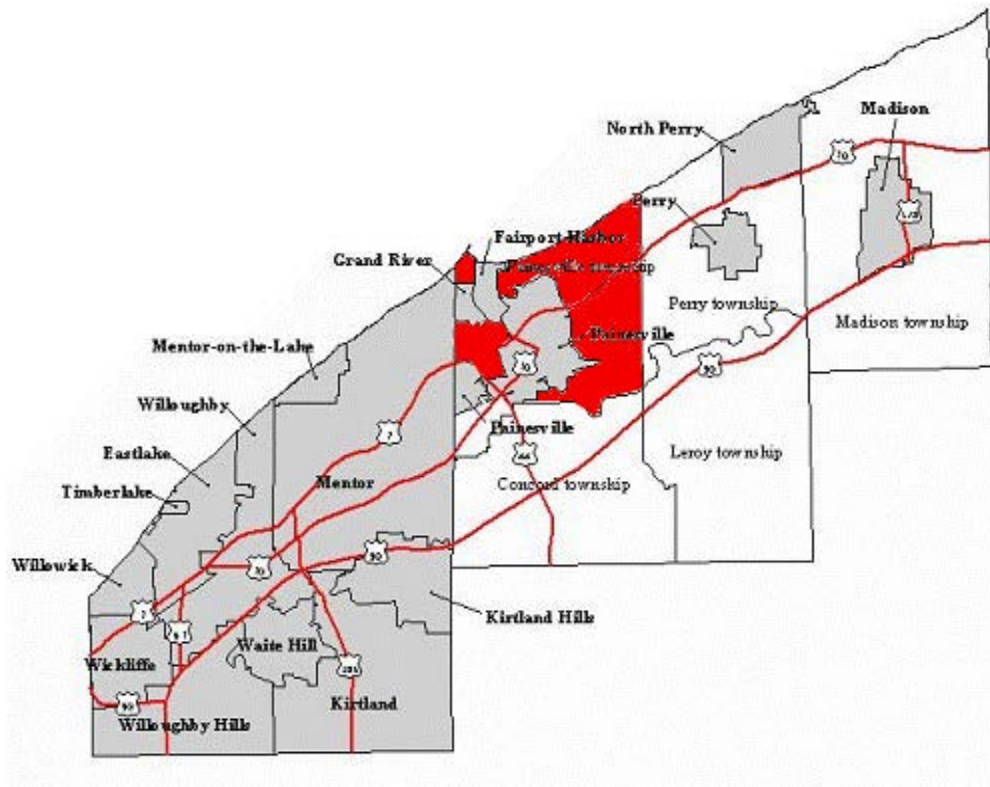
In 2012, the Department reported it responded to 3715 requests for service:

<b>Breakdown</b>	<b>Number</b>	<b>Percentage of calls</b>
FIRE:	104	2.8
EMS:	2632	70.8
OTHER:	979	26.4

The department operates out of one station and has 3 Engines, 1 Ladder shared with Concord Township Fire, 3 EMS units and several support and staff vehicles.



## PAINESVILLE TOWNSHIP



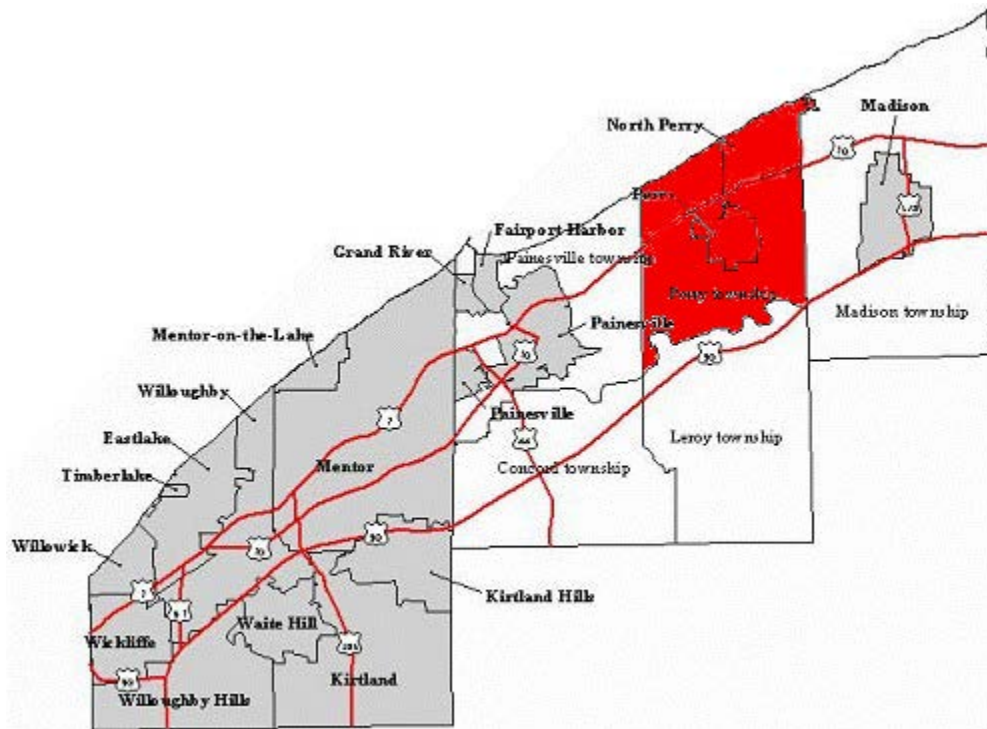
Painesville Township Fire Department was founded in 1966 and provides service to Painesville Township's 16,891 residents and businesses located in 17 square miles. The department also provides support to the Village of Grand River Fire Department. The Fire Department consists of 1 Chief, 9 Lieutenants, 18 Full-time career firefighters and 24 Part-time firefighters. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team and Rescue Team. The Department is a participant in the East End Fire Chiefs Auto Aid Agreement and a member of the Eastern Lake County COG.

In 2012, the Department reported it responded to 1813 requests for service:

Breakdown	Number	Percentage of calls
FIRE:	106	5.9
EMS:	1707	94.1
OTHER:	N/A	

The department operates out of three stations and has 4 Engines, 1 Quint, 4 EMS units and several staff vehicles.

## PERRY FIRE DISTRICT



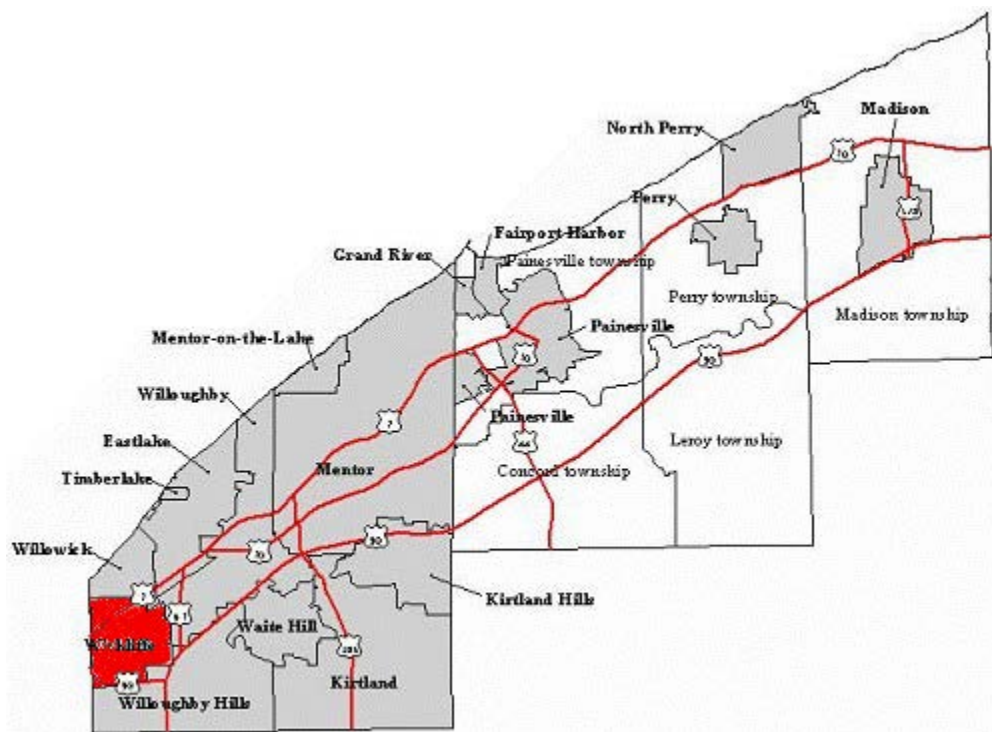
Perry Fire District is one of two (2) Districts in the County. It provides Fire and EMS service to Perry Township and the Villages of North Perry and Perry's 9005 residents and businesses. It is the home of the Perry Nuclear Power Plant. The Fire Department covers 26 square miles. The original Department founded in 1937 converted to a Fire District in 2002 under terms of an agreement between the two (2) Villages and the Township. The District consists of 1 Chief, 1 Captain, 6 Lieutenants, 18 Full-time firefighters and 15 part-time firefighters. The department provides both Fire and EMS service as well as participation in the Lake Co Fire Investigation Unit, HazMat and Technical Rescue. The Department is a participant in the East End Fire Chiefs Auto Aid Agreement and a member of the Eastern Lake County COG.

In 2012, the Department reported it responded to 1266 requests for service:

<b>Breakdown</b>	<b>Number</b>	<b>Percentage of calls</b>
FIRE:	26	2.1
EMS:	607	47.9
OTHER:	633	50

The department operates out of two stations and has 4 Engines, 4 EMS units and several support and staff vehicles. The department recently acquired a ladder truck, which is shared with Madison Fire District.

## WICKLIFFE



Wickliffe City Fire Department was founded in 1921 provides service to Wickliffe City's 12,750 residents and businesses located in 4.66 square miles. The Fire Department consists of 1 Chief, 19 Full-time career firefighters (4 Captains, 3 Lieutenants, and 12 Firefighters) and 17 Part-time firefighters. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team, Tech Rescue Team, Lake County Fire Prevention, and Lake County Fire Investigation Unit.

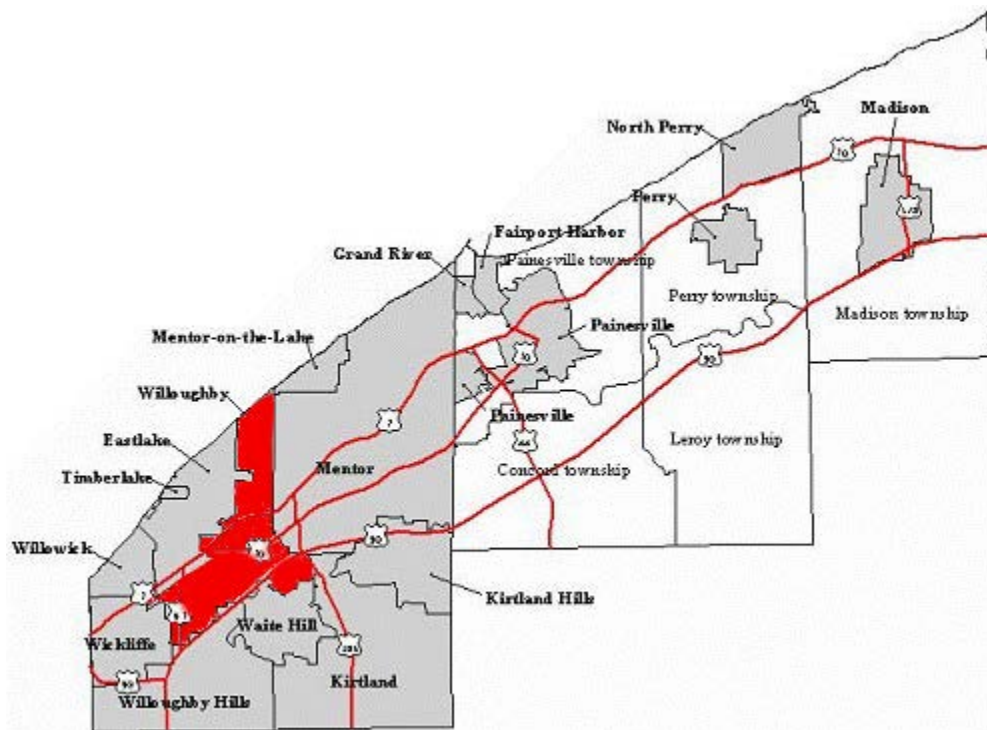
In 2012, the Department reported it responded to 2204 requests for service:

Breakdown	Number	Percentage of calls
FIRE:	494	22.4
EMS:	1710	77.6
OTHER:	N/A	

The department operates out of one station and has 2 Engines, 1 Ladder, and 3 EMS units.



## WILLOUGHBY



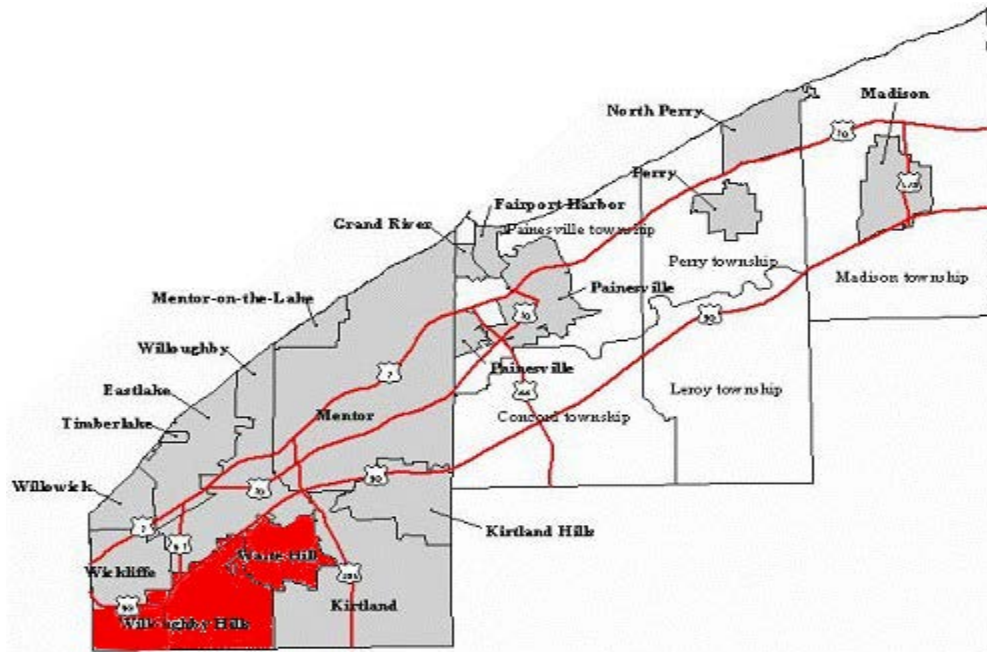
Willoughby City Fire Department was founded in 1894 and provides service to Willoughby City's 22,268 residents and extensive business community located in 10.34 square miles. The Fire Department consists of 1 Chief, 1 Assistant Chief, 3 Captains, 6 Lieutenants, 27 Full-time firefighters and 26 Part-time firefighters with additional administrative and support staff. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team, Lake County HIT and Tech Rescue Team.

In 2012, the Department reported it responded to 4855 requests for service.

<b>Breakdown</b>	<b>Number</b>	<b>Percentage of calls</b>
FIRE:	1347	28
EMS:	3508	72
OTHER:	N/A	

The department operates out of two stations and has 3 Engines, 1 Ladder, EMS units and numerous support and staff vehicles.

## WILLOUGHBY HILLS



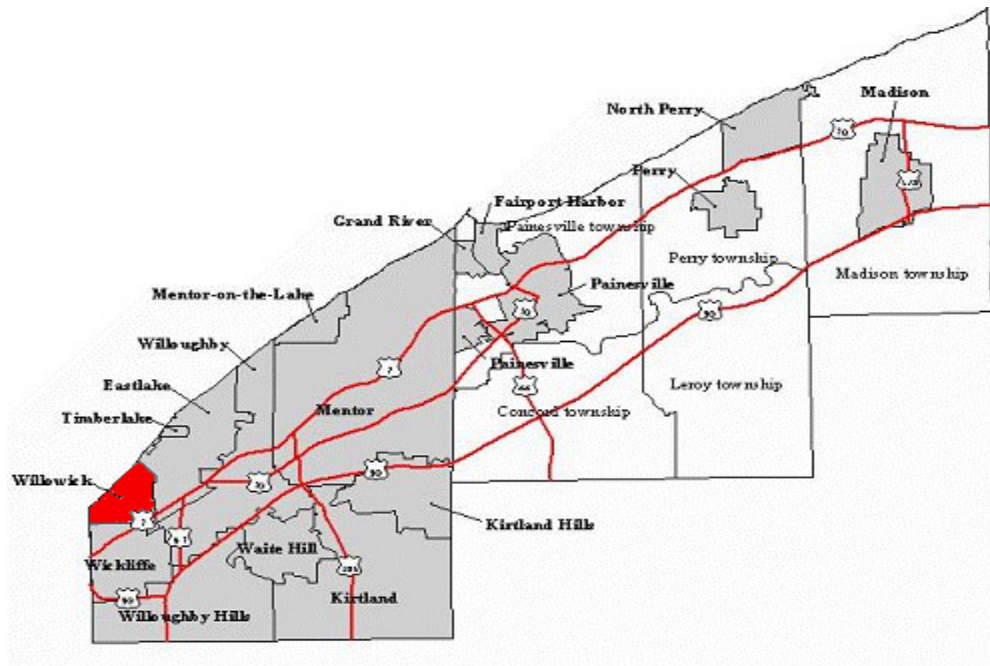
Willoughby Hills City Fire Department was founded in 1947 and provides service to the City of Willoughby Hills and the Village of Waite Hill's 9,956 residents and businesses located in 15.07 square miles. The Fire Department consists of 1 Chief, 3 Captains, 3 Lieutenants, 3 Full-time firefighters and 26 Part-time firefighters. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team, Hillcrest Tech Rescue Team, and Lake County Fire Investigation Unit.

In 2012, the Department reported it responded to 1552 requests for service:

<b>Breakdown</b>	<b>Number</b>	<b>Percentage of calls</b>
FIRE:	238	15.3
EMS:	884	57
OTHER:	430	27.7

The department operates out of one station and has 2 Engines, 1 Ladder, 2 EMS units and several staff vehicles.

## WILLOWICK



Willowick City Fire Department was founded in 1924 provides service to Willowick's City's 14171 residents and businesses located in 2.54 square miles. The Fire Department consists of 1 Full-time Chief, 5 Part-time Captains, 8 Part-time Lieutenants, and 42 Part-time firefighters with additional administrative and support staff. The department provides both Fire and EMS service as well as participation in the Lake County HazMat Team, and Tech Rescue Team.

In 2012, the Department reported it responded to 2118 requests for service:

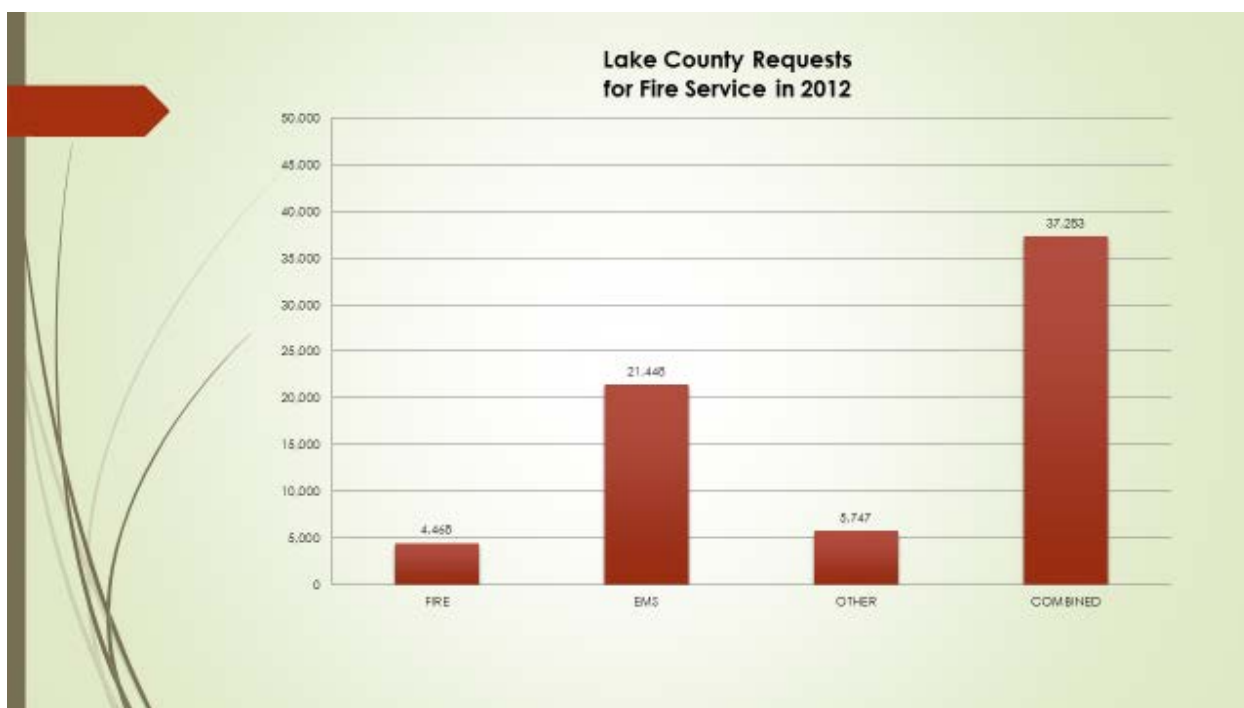
Breakdown	Number	Percentage of calls
FIRE:	435	20.5
EMS:	1683	79.5
OTHER:	N/A	

The department operates out of one station and has 2 Engines, 1 Ladder, 3 EMS units and several staff vehicles.

## Department Activity

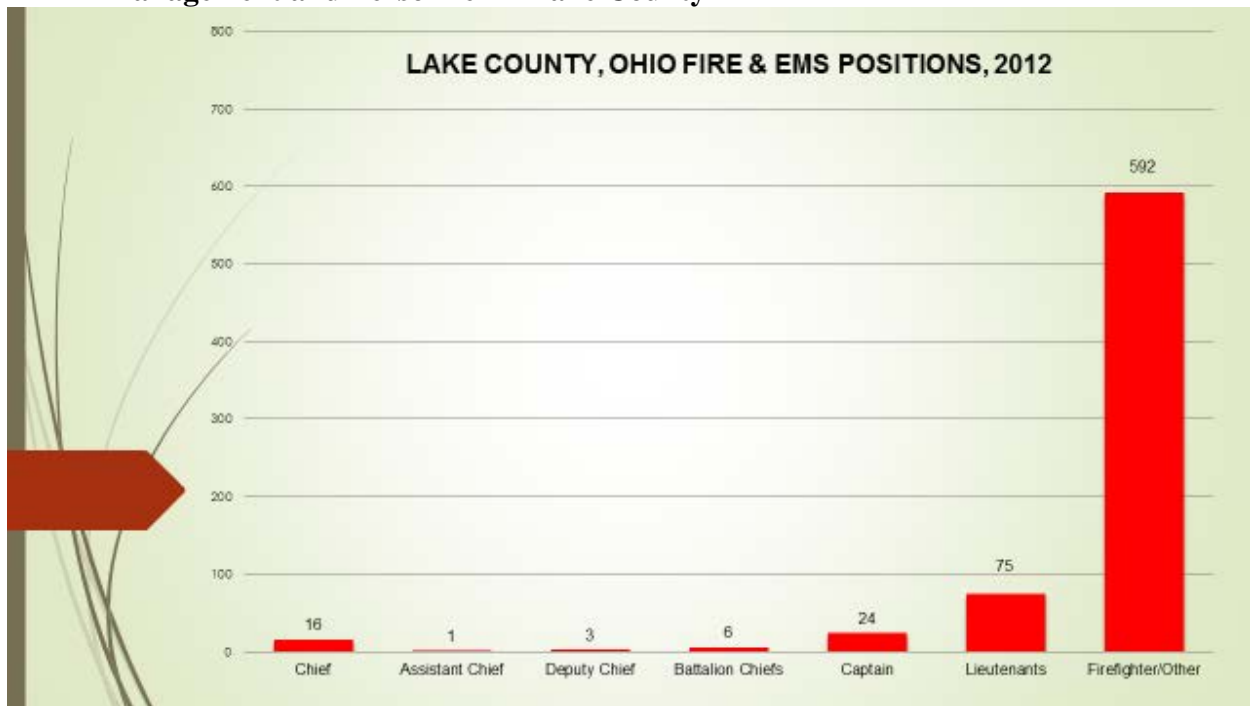
In 2012, Lake County Fire Departments responded to 37,283 requests for Fire, EMS and Other service calls based on survey results. All Departments provide Fire and EMS/Advanced Life Support services to their jurisdictions. As noted in the table below the primary requests for service in 2012 were for EMS. EMS represents 21,448 request or 57.5% of the activity in 2012. Fire call requests were 4,468 or 12% of all the departmental activity. The level of EMS activity has had an impact on how departments man their stations and focused the departments on providing high quality EMS service and response while continuing to provide Fire safety response. As will be discussed later, many departments are staffing for multiple squad calls and counting on mutual aid agreements to support fire suppression activities.

It should be noted that based on the *NFPA Fire Analysis and Research Division, Fire Department Profile, 2012*, a summary of which may be found in Appendix B. A majority of Fire Departments in the country are volunteer with only 16% being mostly or all career departments. Lake County far exceeds that percentage. Additionally only 15% of Fire Departments nationally provide EMS/Advanced Life Support service whereas 100% of the departments in Lake County provide that level of service. Again, Lake County far exceeds the national average for level of service.



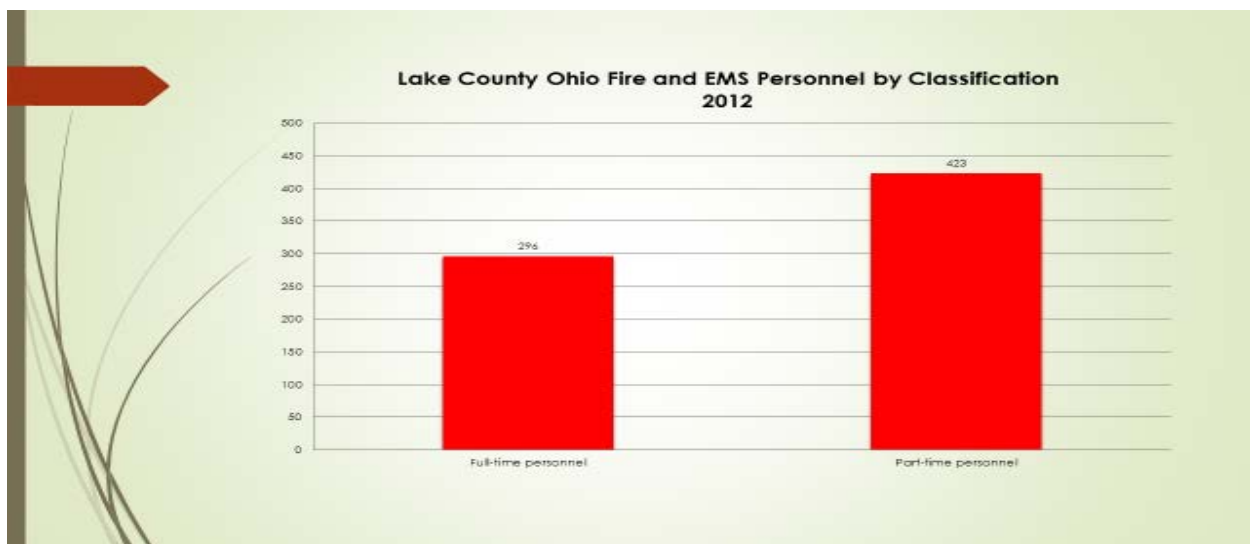
Source: Survey of Fire Departments

### Management and Personnel in Lake County



Source: Survey of Fire Departments

There are a total of 719 Fire & EMS personnel distributed throughout Lake County, Ohio, with a ratio of 296 Full-time personnel to 423 Part-time personnel. Many of the Part-time personnel work for multiple departments to generate full-time income. Part-time personnel are also a source of potential full-time applicants when a position is available. Except for the city of Willowick, where all staff are part-time except the Chief, the Village of Grand River, and Leroy Township where all employees are part-time and Eastlake where all staff are full-time, part-time personnel are used alongside full-time personnel to cost effectively increase manpower. This format of staffing appears to work well for all the departments using it and has kept personnel expenditures from dramatically increasing while maintaining a consistent level of service in each community.



Source: Survey of Fire Departments

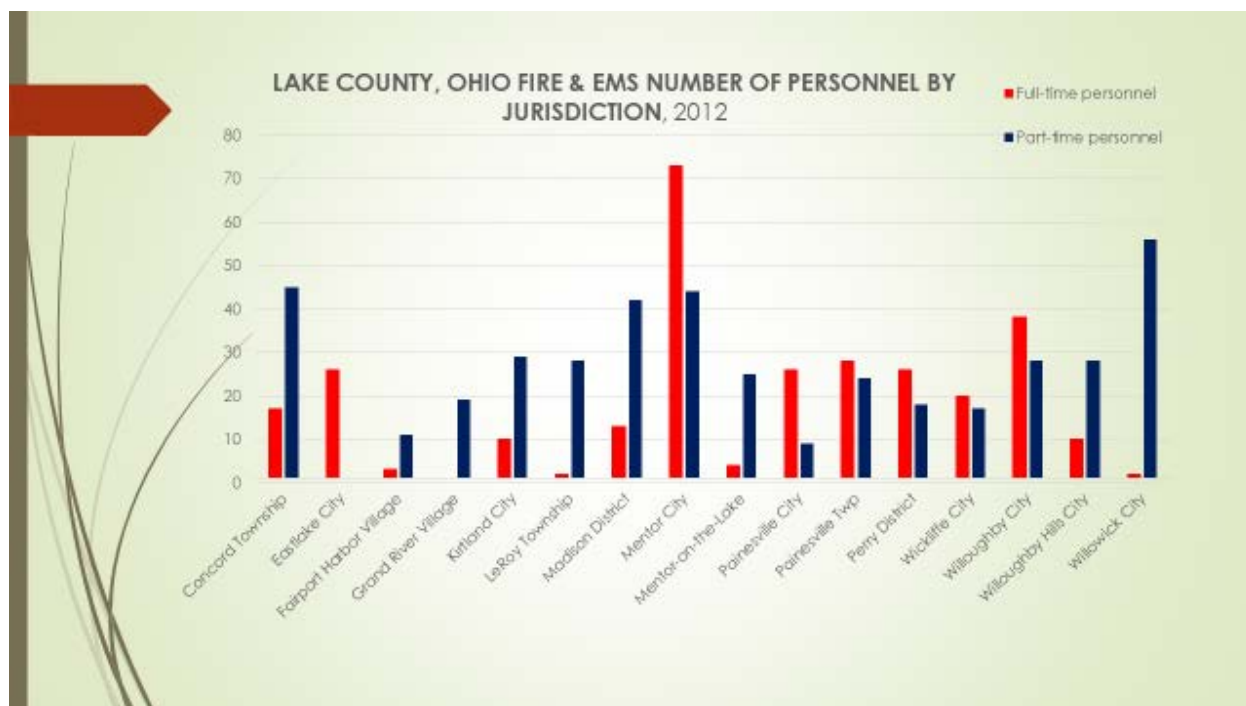
For analysis purposes it was determined that using a fulltime equivalency for the part-time staff would generate a county wide staff number that could be used in comparing various consolidation options. The number of hours part-time personnel work varies by department. No two departments use part-time personnel in the same manner, reflecting the individual goals of each community. To generate a Full-time Equivalent, (FTE), the total number of Part-time personnel was divided by three (the average 8 hour day). The resulting FTE equivalent is 141. The total number of Full-time Equivalent Fire & EMS personnel is

Full-time	296
<u>Part-time (FTE)</u>	<u>141</u>
Total FTE	437



## Management and Personnel by Department

The following is a break down, by department, of the Full-time and Part-time personnel within the Lake County, Ohio Fire & EMS Departments.

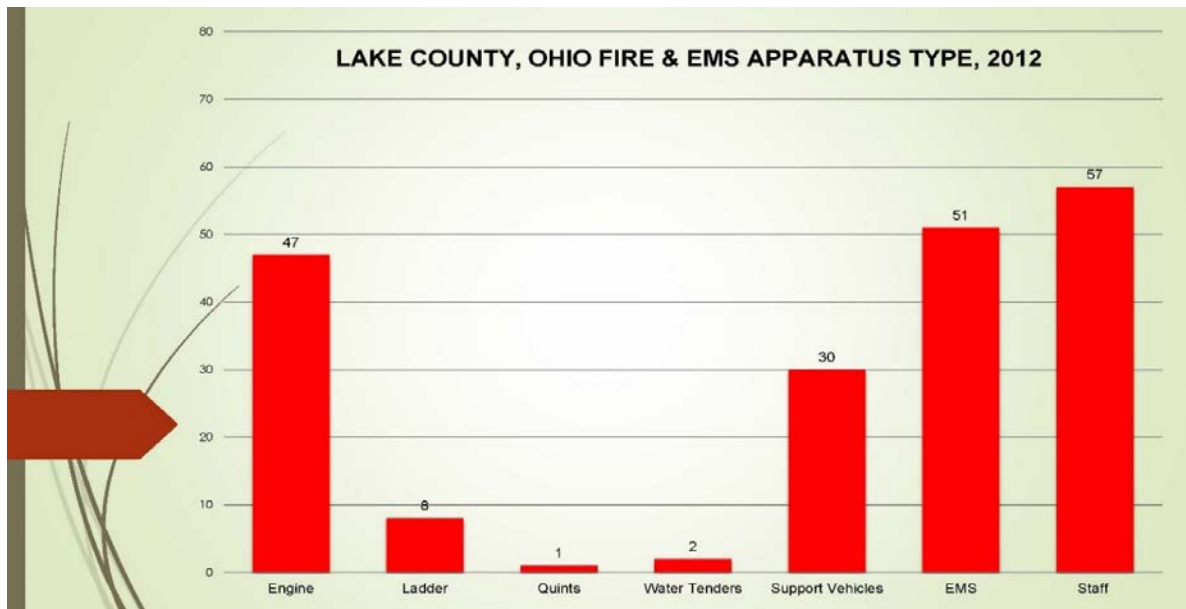


Source: Survey of Fire Departments

As indicated previously, Part-time Fire & EMS personnel are utilized extensively, in an effort to maximize operations and minimize overall operational costs. A number of the Lake County, Ohio Fire & EMS Departments utilize this model for staffing, and it has been successful in meeting the current staffing demands.

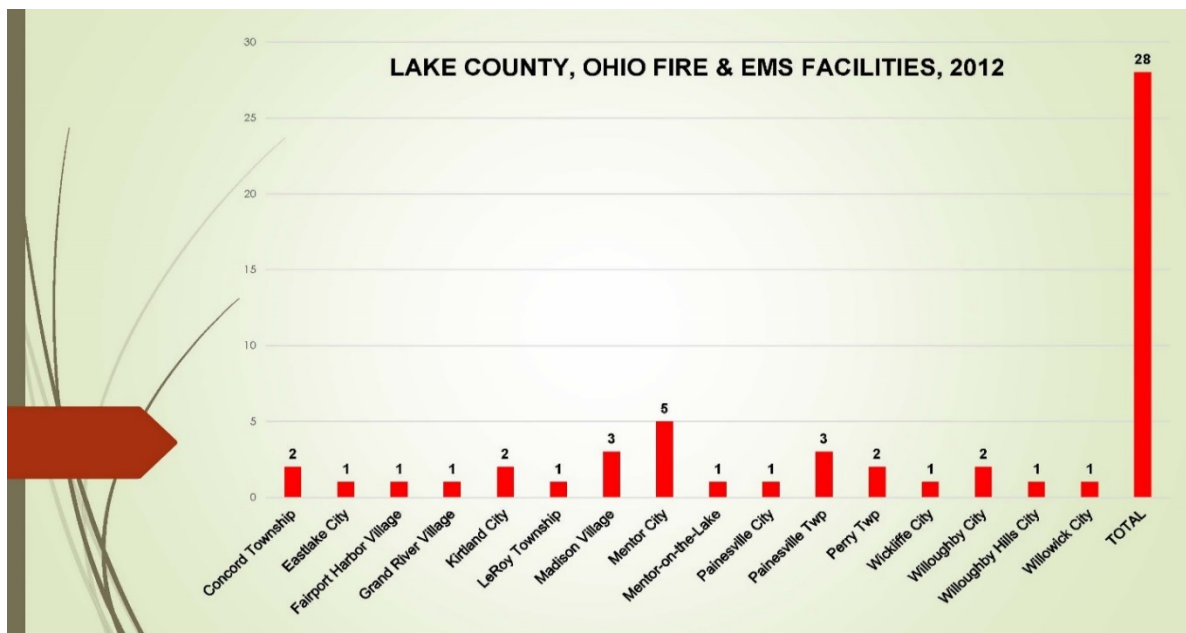
## Capital Assets in Lake County

The Lake County, Ohio Fire & EMS Departments have various capital assets, both in fixed facilities, apparatus and equipment. Listed in the table below is a summary of the apparatus types and fixed facilities throughout the county. Individual department summaries are include in the Description of Department section of this report.



Source: Survey of Fire Departments

Support Vehicles are other items of equipment that are used by the Fire Departments to support additional services provided by their agency such as a Technical Rescue Truck or Rescue Watercraft. The Staff vehicles are all other cars or vehicles used by the department staff for general transportation.



Source: Survey of Fire Departments

There are twenty-eight (28) stations throughout the County. A majority of the departments operate out of a single station with four (4) Departments operating two (2) stations and two (2) departments operating three (3) stations. The City of Mentor, the largest community in Lake County in population, operates five (5) stations to serve their community.

## **Emergency Medical Service**

The Lake County, Ohio Fire & EMS Departments subscribe in delivering the highest quality Emergency Medical Services to all jurisdictions through Lake County, by the use of Basic and Advanced (Paramedic) Life Support Programs. All of the Lake County, Ohio Fire & EMS Department follow the applicable requirements, established by the Ohio Department of Public Safety, Division of EMS. All Lake County Departments provide Advanced (Paramedic) Life Support Programs. As described in the previous section response to EMS requests for service is the largest percentage of the Lake County Department's' activity representing 57.5% of all calls in 2012.

### **Ohio Emergency Medical Service**

The Division of Emergency Medical Services (EMS), in conjunction with the State Board of EMS, is responsible for establishing training and certification standards for fire and emergency medical services personnel; accreditation of EMS and fire programs; oversight of Ohio's trauma system; grants for emergency medical services organizations; Emergency Medical Services for Children (EMSC); Regional Physician Advisory Boards; collection and analysis of data submitted to the EMS Incident Reporting System and the Ohio Trauma Registry; and investigations to ensure compliance with Revised and Administrative Codes.

All Lake County Fire & EMS Department participate in meeting the annual continuing education and recertification process, established by the Ohio Department of Public Safety, Division of EMS. A number of the Lake County, Ohio Fire & EMS Departments have on-staff Emergency Medical Service Instructors, and maintain all critical documentation for individual certification.

The Lake County, Ohio Fire & EMS Departments utilize a transport system, based on their individual departmental protocols, and the Ohio Trauma System requirements. Hospitals utilized include:

Lake Health West Hospital  
University Hospital  
Tri Point Medical Center  
University CASE Medical Center  
University Geauga Hospital  
Hillcrest Hospital  
Euclid Hospital  
Richmond Heights Hospital

Additionally there are occasional transports to the University Hospital System and the Cleveland Clinic in the City of Cleveland.

Each Lake County, Ohio Fire & EMS Department follows their department and Medical Director approved protocol for EMS service delivery and remains up-to-date with all protocol changes and techniques. Medical Direction is provided by either Lake Health or University Hospitals.

## **Lake County Fire Service Shared Resources**

The success of the Lake County Fire Departments is not in any one department but in the collective and mutual sharing of resources and personnel of all departments on a daily basis. A strong collaborative effort involving the county Fire Chiefs and other community-based organizations has allowed this county's fire service to expand and provide service delivery for both emergency and non-emergency incidents.

All fourteen (14) fire departments and two (2) fire districts provide the traditional fire service suppression services. In addition to fire service, all departments and districts also provide advanced life support emergency medical services to their jurisdictions, which encompass the entire county. While these traditional services can be expected in almost every fire department across the country, the following efforts are some of the reasons that make Lake County a success:

### **Radio Communications**

All departments have purchased individually and as groups a radio system that can be broadcast not only through the entire county but is part of a regional and statewide communications program. A good radio system that is truncated with multiple channels and dynamics allows for good communications at each emergency and non-emergency incident. The system gives the county the ability to communicate with non-fire medical helicopters that come into the county from several counties away and a host of other non-traditional agencies and organizations that provide support and assistance to the departments and communities in and out of the county. In addition, the County's command van has a viper system that enables communications with out of county resources that do not have compatible communications.

### **Standard Operating Procedures**

While all departments has their own standard operating procedures or guidelines the County Chiefs have also adopted procedures and guidelines for the entire county. The guidelines are the basis for most departments' fire ground procedures and are used when multiple departments are working together at an incident.

### **Standard Training and Command Procedures**

With County SOP's, departments train to those policies and procedures, which not only include basic fire ground techniques and tasks but also command procedures. Terminology is a key focus and follows national incident management system recommendations.

### **Automatic Aid**

This is a system where multiple mutual aid departments are dispatched at the same time as the host department is dispatched based on standardized policies. It allows for appropriate staffing to respond simultaneously in an attempt to meet recommended NFPA staffing requirements. When applicable, departments will cancel the in-coming fire companies from other responding mutual aid communities as soon as it is determined that additional staffing and resources are not needed. If the incident requires all departments to mitigate the incident, assignments are given on a prearranged radio channel from one incident commander until a command team can be established. The automatic aid response program allows for expansion into a multiple alarm incident using the county's mutual aid box alarm system.

### Command Teams

It is recognized that good firefighters mitigate an incident. It is also recognized that with good command and control teams, firefighters not only stay safer but also have less duplication of effort and accomplish tasks in a more efficient and timely manner. Dependent on the size and nature of an incident, command teams will be established at either an entire county level or a local level involving several departments. Chiefs and command staff personnel will respond and provide all functions of incident command and support functions. All personnel are trained to all functions of the command staff and will also perform any task to ensure the safety and well-being of the fire ground personnel. In addition, personnel will also assist in maximizing resources and ensuring that the daily service delivery continues even during a multi-jurisdictional emergency or event.

### Incident Management Assistance Team (I.M.A.T)

This was developed based on the initial success of the command teams. The Incident Management Assistance Team has trained for a number of years and has developed into a multi-disciplined team of County Chiefs and Directors including the fire service, law enforcement, emergency management, public health, local hospital, public works, and the county's geographical information systems department. The foundation for this team has been the Fire Chiefs of Lake County. Through the success at many major emergency and non-emergency incidents, the other entities have joined in to make it a strong and well-rounded team.

### Mutual Aid Box Alarm System (M.A.B.A.S.)

This was one of the forerunners to the county's success. First initiated in the early 1980s and refined repeatedly, this system provides a managed and escalating response of resources in almost every aspect the fire service delivers. Every fire department and district follows the same guidelines; all box alarms throughout the county are numbered to identify department, municipal or district zone and type of resources. Each box alarm is duplicated with a total of five alarms for each box type. If resources are needed past five alarms, which include not only county resources but also neighboring county resources, the system will then default to the Ohio Emergency Response Plan. The Ohio Emergency Response Plan has strong roots to Lake County. Several Chiefs from the county were instrumental in developing the same format that works well in Lake County into a statewide plan of emergency response. This statewide response plan has now been initiated by several states across the country utilizing the model that was first developed by Ohio with the input from Lake County's success.

### Fire Chiefs Response

Fire Chiefs all across the county will respond to all working fires and major incidents to ensure duty shift officers have the resource support and additional command assistance needed for a particular incident. This 24/7 response is one of the leading strengths in the county as it relates to emergency response. It ensures safety, promotes good working relationships and creates an environment where mitigating the incident is resolved with similar strategies. Chiefs can be assigned to any type of support or command roll that is needed from victim services to firefighter rehabilitation. Response is based on the size of the incident. Chiefs from neighboring communities will also take an active support role in maintaining the neighboring community's daily operations as others work to mitigate the major emergency incident.

### Standardized Apparatus Numbering

All vehicles in the county are numbered using a system that identifies the department, station and type of vehicle. This is useful when multiple companies are responding. Standardization on the small things enables operations that are more efficient.

### Shift Commander Sharing and Support

Shift Commanders from neighboring departments respond to other departments to provide command and control assistance to the incident commander. In some cases, it may be direct fire ground support and in others, it may be assistance of some other nature. These Shift Commanders scan surrounding communities to allow them to be knowledgeable of available resources and potentially resource support for their neighbors.

### Chief's Cooperation and Collaboration

The Lake County Fire Chiefs Association appoints Chiefs to chair committees involving almost every aspect of the fire service. Those Chairpersons illicit support from other chiefs to operate many specialty teams and day-to-day operations. Cooperation is the key to this success. The Association has developed funding models to support special projects. They have also worked together on group purchasing of equipment and grant writing. In many cases, grants are written from a regional and joint collaboration perspective with the idea that a gain in specialty equipment by one department is a gain for the entire county. The Chiefs also have a west county and east county sub-groups that work together to support each other in their geographical districts. The geographical sub-groups have many common challenges due to demographics. It is not uncommon for members from the other sub-group to attend the others meetings.

### School Safety Task Force

The County was fortunate enough to have several County Chiefs on the State Attorney General's School Safety Task Force. These individuals met on many occasions with others across the state to bring our strengths in Lake County to others and to learn from best practices. Additionally, many Chiefs worked towards school safety planning throughout the county with our local schools to further advance our planning efforts in the event a school emergency incident were to occur. The planning initially revolved around an active shooter scenario but soon changed to an all hazards approach to mitigating an incident at our schools with multiple local and county agencies. Numerous tabletop drills involving public safety and local schools have been completed along with hands on extraction training. Schools and public safety continue to work towards and develop plans as a result of best practices.

### Apparatus Sharing

On a regular basis, departments will share apparatus when a neighbor's apparatus is taken out of service for repairs. Sometimes this may be a planned major repair or an unexpected repair that may take a few days to several weeks; at times, apparatus is shared. Certainly, it is realized that there are insurance issues and liabilities with this but with good communications with insurance carriers, an assumption of responsibility by the barrowing department and minimal training; it enables a community to continue to provide service as opposed to calling for mutual aid and disrupting another community.



### Specialty Equipment Sharing

Almost every department has some form of specialty equipment that is needed by their community to provide effective service. Often several communities look at specialty equipment and work together to prevent unneeded duplication. As an example, when a situation occurs in the county that a community needs an all-terrain vehicle or gator, multiple units will respond, dependent on need, from agencies that have that type of specialty equipment. Sharing of specialty equipment is also used in non-emergency situations when a large event is planned in a particular community. Included in non-emergency sharing is respirator fit testing equipment, flow testing equipment, motorized hose rollers, pump testing, fire extinguisher trainers, CPR manikins, rescue manikins and pump test pit sharing to name just a few.

### Adobe Connect

This effective communication allows primarily training to be broadcast to all participating agencies. This program was initiated by the Mentor Fire Department and has now expanded to fire and other participating agencies in two neighboring counties. This program is another factor in ensuring similar training and terminology continues throughout the county. It also allows multiple departments to be aware of something new or unique while on duty without bringing those firefighters out of their service districts while on duty or creating a need for overtime.

### Specialty Vehicles

There are a number of specialty vehicles throughout the county. They include Hazardous Materials Vehicle #1, Hazardous Materials Vehicle #2, Air Truck #1, Air Truck #2, and an Incident Command Truck. These were all initially purchased with collaborative grants and then turned over to individual departments to maintain and operate for the benefit of the entire county. In addition to the specialty vehicles that were purchased through collaborative grants, many other vehicles have been purchased individually by departments or with some type of external funding. These would include dive trailers, firefighter rehab trailer, Medical Incident Response Trailer (MIR), Decontamination Truck, wild land vehicle, bariatric squads, and various types of watercraft. All of these resources either are built into responses or are on a specialty call list to provide services that not all departments could afford to maintain.

County Chiefs are actively looking at specialty apparatus when it applies to ladder or aerial trucks. In most cases, it does not make much sense for each department to have the same aerial device. Aerial devices vary considerably in size and type of work that can be performed. While larger units are used in certain instances, small ladder trucks are more adapt to getting into narrow allies to affect a rescue or help with fire suppression efforts. Ladder truck articulation also plays a role in its effectiveness. As units are replaced, it is planned to take a better look at not only the need but also the purpose of the intended vehicle as opposed to existing aerial devices.

### Specialty Teams

County Special Teams include Hazardous Materials, Swift Water, Open Water, Dive, Ice, Trench, Structural Collapse, Confined Space, Fire Investigation, High Angle and Urban Search and Rescue. All of these teams are collaborative of personnel, equipment, and apparatus.

The Haz Mat Team is one of ten in the State of Ohio that is rated as a Type I team. Type I teams are the highest rated teams across the country. It takes a considerable amount of work and coordination to retain this team typing and it is done through the guidance of the County Chiefs and very talented and knowledgeable firefighters. This haz mat team is well respected and is activated in a standby mode when various dignitaries including the President of the United States come to the region. These teams train on a regular basis and the County Fire Chiefs provide guidance to the team's leadership. Many of the technical rescue personnel belong to Ohio's Region 2 Urban Search and Rescue Team. This team is based in Cleveland Ohio and provides technical rescue that exceeds individual counties abilities. Lake County personnel are involved with many aspects of this team. Through inter agency cooperation; personnel attend training at many different private and federal venues. Education is important and the County Chiefs ensure that opportunities are available to these dedicated response personnel. Personnel through coordinated grant efforts with Federal Emergency Management Agency (FEMA) and the Department of Homeland Security (DHS) have attended Hazardous Materials Training at the world renowned Security and Emergency Response Training Center in Pueblo, Colorado, Weapons of mass destruction training in Aniston, Alabama and radiological training in Oak Ridge Tennessee. Relationships with private industry throughout the county allow for on-site training and private industry sponsoring personnel in attending high tech training in various parts of the country. The Lubrizol Corporation, a chemical specialty company headquartered in Lake County, that has sponsored specialty fire training held at Texas A&M's fire training facility. Both Lubrizol facilities in Lake County have fire response personnel that interact and participate with public safety personnel. Their expertise and willingness to participate with the County's public safety personnel is an asset. When our firefighters return, they share what they have learned at these specialty-training facilities and increase the knowledge and methodology of our specialty teams. While these teams are not deployed every day, their combined training and interaction relates positively to everyday interactions in EMS and joint fire responses.

#### Emergency Management Agency and Local Emergency Planning Committee

The Fire Chiefs take an active role in both of these organizations for not only the fire service but also other public agencies that will provide assistance to our communities. A good working relationship with both organizations with Fire personnel on various committees and in supportive planning positions enables the Fire Chiefs to not only be knowledgeable but also be functional participants in countywide disasters within these two agencies. An assigned Fire Coordinator also is a participant in the County Emergency Operations Center (EOC) when activated. The Chiefs commit personnel to mandated training by other agencies to prove proficiencies and demonstrate capabilities. Recently the Chiefs took the lead in a State Emergency Response Commission drill. While it involved multiple agencies, the fire service coordinated the effort into a unified command system. Lake County met 37 out of 37 objectives while exceeding expectations. The Nuclear Regulatory Commission and Federal Emergency Management Agency require regular evaluations of personnel due to the Perry Nuclear Power Plant being located in the county. A recent evaluation of the hostile action scenario drill was only the third in the entire country and was highly successful. The Federal Emergency Management Agency (FEMA) and the Nuclear Regulatory Commission (NRC) Evaluators in a post action report stated it is highly unusual to have no findings or grounds for corrections.

Personnel not only exceeded expectations of the Evaluators but they also were very impressed with the inter agency cooperation that was exhibited. High caliber evaluated drills by the Federal and State government are typically not as successful for others. Lake County's success is due to the willingness of everyone to work together for the benefit of the communities that form this county. This does not happen overnight, it happens with years of collaboration and good inter agency communications.

#### Compliance Drills

There are numerous compliance drills that the departments of the county participate in to ensure that adequate funding continues to come into the county. These compliance drills as previously mentioned consist of Nuclear Power Plant drills for FEMA and the NRC to the State Emergency Response Commission evaluation of our abilities to mitigate hazardous material incident and continue our all hazards planning processes through the Local Emergency Planning Committee. All departments assist with manpower and equipment in order to maintain compliance.

#### Fire Prevention/Code Enforcement

On a quarterly basis these personnel come together to provide insight into problems occurring in their communities and make those meetings into an education event for the benefit of all. They will have outside speakers attend to provide additional training and knowledge to benefit everyone in their various positions.

#### Public Educators

This group is a wide-ranging group of public educators. Participation includes fire departments, police departments, public health, hospital educators, emergency management agency personnel and many others. They work at each other's larger community events and collectively are able to get the educational messages to the public.

#### Incident Command Training

The Lake County Fire Chiefs have not only adopted "Blue Card" Incident Command Training they have become a provider site. Personnel take the 40-hour class on line and then spend three days in a classroom and simulator working on their command and control skills. All personnel going through one class with similar instructors ensures terminology and compatibility on incidents. This has been a highly successful training initiative that has produced immediate results to the safety and effectiveness of our personnel at fire incidents.

#### Emergency Medical Services

The County Chiefs take an active role in EMS delivery and management throughout the county. Developed relationships with the local hospital system and the Chiefs allow for integration of personnel for effective emergency and non-emergency management. While all Departments and Districts provide their own EMS services, the interaction of all EMS units allows for a fluid interaction of support and mutual aid that crosses municipal boundaries on a daily basis. While not unusual for the fire service, the Departments in the county spend a considerable amount of time helping residents in non-emergency situations on a daily basis to enable residents to continue their quality of life. Non-emergency public assists are a common and much needed service that is provided to the seniors and challenged residents of the county.

#### New Firefighter Hiring

Several Departments have joined to develop similar hiring requirements. Those requirements allow an applicant to complete screening processes that are shared by all departments in a progressive format. Once the joint screening process is completed, departments have the ability to select new applicant for their department thus eliminating needless duplication between communities and departments.

#### Council of Governments

This program was first introduced by Chiefs from the eastern portion of the county for the purposes of making joint apparatus purchases. This initiative by the Chiefs and with the help and approval of their community leaders has resulted in several joint purchases. This was a tremendous undertaking by the Chiefs to get the support of their Mayors, Trustees and Legislative bodies to meet and agree to such a program. This program has also assisted with a closes unit response survey, joint training, other group purchases and regional grant writing. While the Chiefs initiated this program, a board now runs this program with only one Fire Chief that represents all participating departments. This collaboration is now positioned to jointly work together for a number of projects that can also be non-fire related projects.

The Lake County Fire Chiefs have a reputation of working together and sharing resources. The Fire Service in Lake County is a motivated and progressive work force that works to plan for and resolve both emergency and non-emergency incidents. The fire service is the "go to" agency when leadership and personnel are needed at any large public or private event. Each event is planned accordingly and used to build upon should a similar incident occur in the future. Moving all the patients from a closing hospital to a brand new hospital in another community, multiple marathons and festivals, H1N1 Clinics, Ebola preparedness, dignitary visits, flooding or other weather related incidents have made the county stronger and better prepared to mitigate incidents. While each department maintains its autonomy, many Fire Chiefs and fire personnel participate in many collaboratives that ties the county's fire service together and makes it into a cost efficient and productive fire service.

## LEGAL ANALYSIS

### **Legal Authority for Consolidation**

Ohio law allows Ohio political subdivisions to enter into contracts with each other in order to provide shared services. Revised Code Section 9.60 provides that political subdivisions may contract with any governmental entity in this state to provide fire protection or emergency medical services, as appropriate, whether on a regular basis or only in times of emergency, upon the approval of the governing boards or administrative heads of the entities that are parties to the contract. The authority under this section is contractual in nature and the duties and obligations of the participants would have to be spelled out in detail in the contract between the governmental entities. A Revised Code Section 9.60 contract does not create a new political subdivision that is able to govern itself and is able to levy taxes. The contract details the exact requirements of each political subdivision and the various firefighters remain employed by their respective political subdivision.

Several political subdivisions in Lake County currently provide fire services and rescue services to another political subdivision that does not have a fire department based on a contract between the two entities. Other than the firefighter that Painesville Township stations at the Grand River Fire Station, it does not appear that there are any 9.60 contracts between two communities that each have fire departments that involve a direct sharing of personnel. (There are several to many contracts that do involve the sharing of equipment.)

It is legally possible for one of the cities in Lake County to enter into a contract with all of the remaining political subdivisions to provide fire and rescue services to the entire county. If that occurred, then the terms and conditions of the various contracts would define the rights and duties of all of the parties and the financial commitments of the various parties.

Ohio Revised Code Section 505.371 – Joint Fire Districts - allows the boards of township trustees of one or more townships and the legislative authorities of one or more municipal corporations, or the legislative authorities of two or more municipal corporations, or the boards of township trustees of two or more townships, to adopt a joint resolution by a majority of the members of each board of township trustees and by a majority of the members of the legislative authority of each municipal corporation in order to create a joint fire district comprising the municipal corporations and all or any portions of the townships as are mutually agreed upon. A joint fire district so created is a political subdivision.

Ohio Revised Code Section 505.375 – Fire and Ambulance District - allows the boards of township trustees of one or more townships and the legislative authorities of one or more municipal corporations, or the legislative authorities of two or more municipal corporations, or the boards of township trustees of two or more townships, to adopt a joint resolution by a majority of the members of each board of township trustees and by a majority of the members of the legislative authority of each municipal corporation in order to create a joint fire and ambulance district comprising the municipal corporations and all or any portions of the townships as are mutually agreed upon. A joint fire and ambulance district so created is a political subdivision. A joint fire and ambulance district is governed by a board of trustees, which consists of at least three but no more than nine members, appointed as provided in the agreement creating the district.

For the purposes of this report, a Joint Fire District under R.C. Section 505.371 will be discussed. A joint fire district is governed by a board of trustees, which shall include one representative from each board of township trustees and one representative from the legislative authority of each municipal corporation in the district. The board of fire district trustees may exercise the same powers as are granted to a board of township trustees in sections 505.37 to 505.45 of the Revised Code, including, but not limited to, the power to levy a tax upon all taxable property in the fire district as provided in section 505.39 of the Revised Code.

The joint resolution must be passed by the legislative bodies of all of the political subdivisions that wish to participate in the joint fire district. The joint resolution would detail the financial and property contributions and obligations by the various political subdivisions to the fire district. The fire district would have an initial organizational structure that would be defined in the joint resolution. The fire district would then have to hire firefighters and other employees in order to provide fire protection for the county or the part of the county that makes up the fire district.

The joint resolution is the “charter” for the fire district and the details in the joint resolution cannot be amended without all of the political subdivisions that participate in the fire district agreeing to any amendment. As indicated above, the fire district has the power to levy taxes that are passed by a vote of the electors who reside in the fire district. The fire district over a period of time could become self-sufficient from the taxes receipts that it receives from the levy or levies that it passes to fund its operations. Once the fire district becomes self-sufficient then it would no longer be necessary for the member communities to contribute their tax dollars to support the fire district.

If a fire district was created, then the cities, villages and townships would no longer have any direct control over the fire department that serves their community except by their ability to influence the decisions of the fire board of trustees by their representative or by their ability to withdraw from the fire district. The fire district would be responsible for making all decisions as to the location of fire stations, the number of personnel for each of the fire stations and the equipment that will be owned or leased by the fire district. If a fire district was created, then the existing equipment and fire stations at least initially would be leased to the fire district. The ownership of new equipment and/or stations would be subject to the terms of the resolutions that create the fire district but it is likely that new equipment or fire stations would be owned by the district. Over a period of time if the fire district is successful in providing quality fire protection services to the member communities and if the fire district passes tax levies that fund its operations, then all of the fire equipment would probably be owned by the fire district and some or all of the fire stations would then be owned by the fire district.

### **Charter Review**

As part of this fire consolidation feasibility study, the Charters for all of the Lake County Communities were reviewed in an effort to determine if the charters permitted or prevented consolidation. The interpretation of all of the charters of the various Lake County Communities is clearly beyond the scope of this feasibility study. Further, the Law Director for a charter community is responsible to interpret the charter. The law director’s legal opinion about the requirements of the charter for their community is the law for that community unless that interpretation is overruled by a court.



The charters of the various communities determine how each of the communities are governed. The great majority of the charters contain language that indicate that:

- (1) council by ordinance may create, change and abolish offices, departments and agencies, other than those established by this charter;
- (2) the charters create a department of safety but not of fire.(the Fire Department is included in the Safety Department.); and
- (3) the positions of Fire Chief are referenced in the Charters.

The law director of one of the communities in Lake County has determined that the charter for his community would have to be amended if his community participates in a fire district for the following reasons:

“Council has the authority to combine or abolish existing *departments*, commissions, boards *divisions*, job classifications or non-elective offices *except for* those specifically provided in the Charter. The Department of Public Safety is specifically provided for in the text of the Charter. Further, the divisions of the Police and Fire Departments are expressly provided for in the Charter. The creation of a joint fire district would thereby eliminate the division of Fire. As under the current City Charter Council does not have the authority to combine or abolish said divisions or departments, the Charter must be amended to provide such authority.”

Other law directors in Lake County may agree with this opinion if it was determined that a fire district was the best option for their community.

The only conclusion that can be reached for this feasibility study is that if a joint fire district is the best option for charter communities in Lake County, then it may be necessary to amend the charters of some or all of the participating communities. The amendment of a charter requires a vote of the people in order to amend the charter. While a vote of the people is not necessary to pass a joint resolution to create a fire district, it may be a de facto requirement if the law directors of the various communities determine that their charter currently prohibits their community from participating in a fire district.

### **Labor Provisions**

Many of the fire departments in Lake County have union contracts with their fire employees. In order to create a fire district, it will be necessary for each of these communities to address the issues that are created by the union contracts. As part of this feasibility study, the union contracts for all of the communities were reviewed.

The union contracts all contain broad management rights language. The contracts contain language that allow layoffs and allow the abolishment of jobs. The contracts do not guarantee jobs for the union members. If a decision is made to join a fire district by a community, then the fire district that is created will become the new employer of firefighters for the area that is served by the fire district. The firefighters in the fire district will have the right to join a union and to negotiate their pay and benefits.

The unions and the union personnel may all feel threatened by the creation of a fire district. The unions and the employees will all want to bargain over the creation of the fire districts and they will all want to preserve their jobs, pay and benefits. If a decision is made to (1) join a fire district; (2) layoff all of the firefighters; and (3) not have the new fire district hire these firefighters, then it is clear that the union will exercise any and all legal rights it has to attempt to protect the jobs of the laid off firefighters. A plan will be needed by the new fire district and its member communities to address the future employment of the firefighters who are currently employed by the member communities.

## FINANCIAL ANALYSIS

### Background and Base Condition

Financial analysis is an important part of any feasibility study. At the beginning of the process, the Research Team identified 2012 as the baseline year for the feasibility comparison. The data collection began with the tax budget documentation from each entity to identify estimated property tax revenues and gross expenditures. This information was supplemented by 2012 budgeted revenues and expenditures from each community Fire Department and District provided by the Financial Officers. Since each community has a unique and individual means of accounting for both expenditures and revenue, the data provided limited information that was comparable across all entities. Therefore, the Team relied on accumulated data in broad general categories to identify trends and evaluate comparisons. Expenditures were categorized as Personal Services, Benefits, Contract Services, Operations, and Maintenance. Personal Services included the cost of salaries and hourly wages for all personnel within the Fire Department. The Benefits includes retirement expenses, health insurance, or other negotiated benefits accrued to the individual. Contract Services are charges that occur as the result of service provided by an outside entity. Operations and Maintenance includes all other expenditures needed to operate the Fire Departments. When revenues specifically associated with the operation of the Fire Department or District did not cover operating expenditures, it was assumed that the entity's general fund revenue or income tax filled the gap.

The size and budgets of each community vary widely and are a reflection of the varying nature and type of communities in Lake County. To compare the data, a standardization of the information was required. The Team looked at each community's revenue and expenditure in terms of a per capita calculation, a calculation based on area served and total property valuation by classification of Residential/Agricultural, Commercial/Industrial and Public Utility Tangible. The information from the individual communities was further combined into two groupings a "West End" and "East End," again for informal comparison purposes. For purposes of this analysis the West End is comprised of the following eleven Fire Departments: Eastlake, Fairport Harbor, Grand River, Kirtland, Mentor, Mentor-on-the-Lake, Painesville, Wickliffe, Willoughby, Willoughby Hills and Willowick. The East End group is made up of the following five Fire departments/districts: Concord Township, Leroy Township, Madison Fire District, Painesville Township and Perry Joint Fire District. This configuration was chosen to combine communities with similar forms of government, i.e. cities with villages and townships with the districts. Each grouping has a unique set of financial and legal criteria when it comes to delivering fire service.

Each Fire entity's data was then summarized and is found in Appendix C

The total revenue supporting Fire Service in Lake County in 2012 for the 14 Departments and 2 Districts is found in the table below.

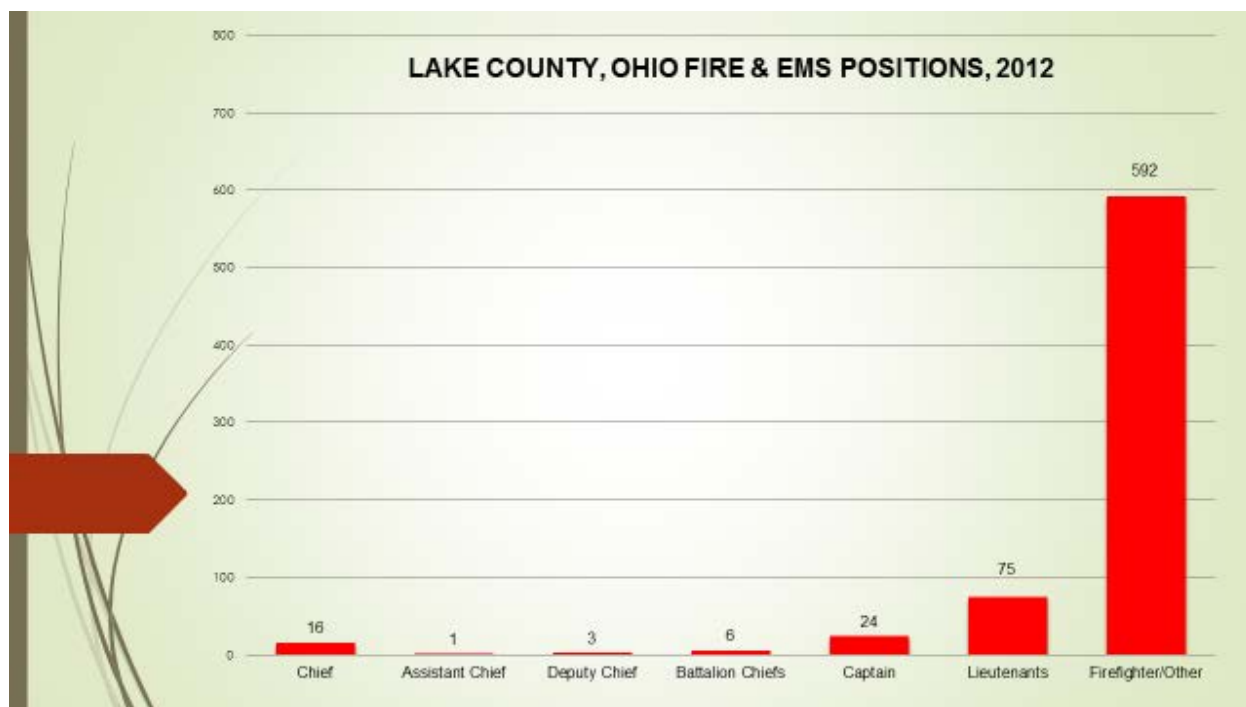
<b>REVENUES</b>	<b>TOTAL</b>
<b>Property Taxes ( Fire Related)</b>	
Schedule A – Inside Millage	\$1,679,309
Schedule A- Outside Millage	\$14,536,467
<b>Subtotal</b>	\$16,215,777
<b>Other</b>	
General Fund/Income Tax	\$22,308,798
Rescue Billing/Charges for Service	\$6,789,535
Misc.	\$834,725
<b>Subtotal</b>	\$29,933,058
<b>Total Revenue</b>	\$46,148,835

The largest percentage of revenue, 48%, supporting fire service delivery in Lake County comes from the communities' general fund and income tax. Outside Millage or voter approved levies represent the second largest amount at amount at 31%.

Total expenditures on fire service in Lake County in 2012 for the 14 Departments and 2 Districts is found in the table below. It should also be mentioned that many cities provide support services such as payroll, purchasing, accounts payable and accounts receivable, and human resources to the Fire Departments and do not charge these as operational expenses thus undercounting the actual operational expense of the department.

<b>EXPENDITURES</b>	<b>TOTAL</b>
<b>Personal Services</b>	\$29,737,488
<b>Benefits</b>	\$11,002,180
<b>Contract Services</b>	\$1,256,244
<b>Operations and Maintenance</b>	\$3,234,932
<b>Total Budgeted Operational Expenditures</b>	\$45,230,844

Personnel Services and Benefits represents 90% of the total operational expenditures. Operations and Maintenance only represents 7.2% of all expenditures. Since expenditures associated with personnel represented the largest percentage of expenditure, the Team captured the total number of personnel and promoted officers in each community. The following table summarizes that data. Since one of the objectives was to determine if the same or greater level of service could be provided at less cost as a result of consolidation it was determined that the focus of the analysis should be on Personal Services expenditures.



Source: Survey of Fire Departments

One of the assumptions identified early in the process was not to address the operational manpower of each department. One focus was to look at the Administrative and Management personnel i.e., Chief's, Assistant Chiefs, Deputy Chiefs, Battalion Chiefs, Captains and Lieutenants. There are a total of 127 FTE's in the 14 Departments and 2 Districts in these promoted ranks. The total expenditure on promoted Personnel Services without benefits in 2012 is \$8,355,055 or 28% of the total personnel services expenditure. It is 18% of the total budgeted operational expenditures on fire service in Lake County.

A primary objective was to improve the level and quality of service. In a field that is heavily dependent on manpower to provide service, it was determined that optimizing the man power would be an appropriate tool to gauge improvement of service. As the model was developed to evaluate cost, the manpower level of each consolidation option was a critical component for evaluation

# FIRE AND EMS OPERATIONAL ANALYSIS

## Background

Communities look for methods of continuing to provide the same level or better services with less resources. The call to consolidate as a cost saving technique occurs whenever the economy slows and demand on State and Municipal resources exceeds their availability. As the buzz word of the last decade “Consolidation” has been seen as a mechanism to share limited resources and hopefully maintain or improve service.

As part of the analysis of the data collected for this study, a review of the Fire and EMS standards and operational recommendations from various sources was conducted. A valuable resources that were used extensively in this review was the National Fire Protection Association Fire Analysis and Research Divisions NFPA *Fire Department Profile, 2012*. The complete abstract is found in Appendix B. Also providing significant support to this research was the work of Dr. John Granito, FPE. A selection of his research is found in Appendix D.

The NFPA estimates that of the 30,100 fire departments in the United States, a majority are volunteer departments. All career or mostly career departments represent less than 16% of agencies in this country. However, Lake County’s 14 Departments and 2 Districts are all career or partly career departments. All operate with some combination of Full and Part-time career officers with the exception of Willowick, Leroy Township and Grand River, which utilizes all part-time firefighters and Eastlake which is all full-time firefighters.

The NFPA has also maintained records of the number of firefighters per 1000 people for various sizes of communities. The following Tables taken from *NFPA Fire Department Profile, 2012* provide an overview by community size and the range of number of career firefighters generally found in those size communities. This information will be useful in evaluating the feasibility of various option for consolidation.

**Table 3.**  
**Career Firefighter Rates**  
**By Population Protected, 2012**

Population Protected	Career Firefighters Per 1,000 People		
	Low	Median	High
1,000,000 or more	0.58	1.14	1.61
500,000 to 999,999	0.38	1.30	3.16
250,000 to 499,999	0.57	1.18	2.44
100,000 to 249,999	0.18	1.34	3.25
50,000 to 99,999	0.03	1.28	3.46
25,000 to 49,999	0.00	1.20	6.60
10,000 to 24,999	0.00	1.00	7.69

Source: *NFPA Fire Department Profile, 2012*.



**Table 5.**  
**Career Firefighters per 1,000 People For All Career Departments**  
**By Work Week and Population Protected, 2010-2012**

Population Protected	Career Firefighters Per 1,000 People		
	40-45 Hour	46-51 Hour	52-60 Hour
1,000,000 or more	*	1.51	1.00
500,000 to 999,999	2.37	1.34	1.23
250,000 to 499,999	1.87	1.85	1.22
100,000 to 249,999	1.93	1.56	1.30
50,000 to 99,999	2.05	1.61	1.40
25,000 to 49,999	2.05	1.58	1.62

Source: *NFPA Fire Department Profile, 2012*

**Table 6.**  
**Median Rates of Career Firefighters per 1,000 People**  
**By Region and Population Protected, 2012**

Population Protected	Northeast	Midwest	South	West
250,000 or more	1.71	1.43	1.28	0.75
100,000 to 249,999	1.99	1.35	1.43	0.85
50,000 to 99,999	2.03	1.18	1.58	0.90
25,000 to 49,999	1.67	1.04	1.53	0.97

Source: *NFPA Fire Department Profile, 2012*

However, as presented in the Description of the Lake County Departments, the Fire Departments in Lake County do not just provide Fire Service to their jurisdictions. The largest percentage of their requests for service are for EMS services. While the above standards are used to determine the number of personnel generally found in various size communities, it needs to be understood that in Lake County those personnel are providing EMS as well as Fire service. As stated previously with the high percentage of EMS calls, Departments are often staffing to meet EMS needs and relying on the existing shared service agreements such as Mutual Aid and Automatic Mutual Aid to meet firefighting needs and the NFPA recommended standards at a fire scene. This existing arrangement is not commonly found in many areas and places Lake County far ahead of many other jurisdictions in the region or State.

The model developed for this analysis will be based on the NFPA median rates identified in the tables above. This is a recognized standard and provides a credible basis for comparison with the existing manpower. Additionally the model is based on full-time employees and associated costs. Once again as noted earlier, Lake County Departments make extensive use of part-time personnel to cost effectively provide the desired level of service to their communities.

When developing the model several sources provided background information and related studies on consolidation efforts were reviewed and consulted. Ironically, almost 20 years ago, the Volunteer Fire Insurance Service (VFSI) published a report entitled *Fire Department Consolidation Why and How to Do It ...Right*.

That report identified many of the same issues that are facing communities today were facing communities 20 years ago. It provided the following summary of consolidation, joint ventures and shared services, which is helpful in establishing background to this report. An excerpt from the report is found in Appendix E.

The Report identifies the continuum of cooperation agreements from informal mixing and matching of services between jurisdiction to a full operational consolidation or merger of jurisdictions. It also outlines various reason why consolidations are often undertaken, such as more flexibility of staff and resource usage, expansion of service at less cost, faster response times, reduced redundancy of apparatus, personnel and equipment, lowering replacement costs for equipment and reduction in numbers of pieces of equipment, and cooperative purchasing. The focus always returns to a reduction in cost and same or better service, which is one of the objectives guiding this feasibility study.

The Research Team also conducted an analysis of other consolidation studies and efforts to determine if there are any best practices which could help guide this study and influence the creation of the model. A ‘request for information’ was submitted in the National Fire Academy “Training, Resources, and Data Exchange Network (TRADENET) for U.S. Fire Administrators. Our request for information (May 2014) states,

*We are searching for any and all information where a county has evaluated their fire and emergency services departments, in an effort to identify areas where consolidation may benefit both the community regarding service and economics.*

As such, a number of responses were received from Fire & EMS Organizations throughout the United States. These organizations all seek to consolidate Fire & EMS Services, whether it includes a few departments, or an entire county, all in an effort to reduce expenditures, develop a consistent training and retention program, and maintain a unified response protocol for all Fire & EMS requests for services.

The information received includes:

- Hernando County, Florida
- Bonita Springs, Estero, San Carlos Park, Fire Protection & Rescue Service Districts, Florida
- Shaker Heights, University Heights, Cuyahoga County, Ohio
- The Cities of Ramsey, Nowthen, St. Francis, Oak Grove, Bethel, Minnesota
- The Cities of Carlton, Wrenshall, Esko, Minnesota
- Stevens County, Minnesota
- The Cities of Wausau, Rothschild, Schofield, Rib Mountain, Weston, Wisconsin

- The Cities of Bay Village, Fairview Park, Lakewood, N. Olmsted, N. Ridgeville, Rocky River, Westlake, Cuyahoga County, Ohio

The summary of the information obtained from those studies is found in Appendix F which identifies the individual jurisdiction, sworn personnel, apparatus, and number of stations, the individual jurisdiction ISO rating, apparatus type, and requests for service. These jurisdictions were used to assist in determining the types of potential collaborative and consolidation options to be considered for Lake County. It should be noted that not all the studies reviewed were considered comparable to the size, configuration, and service of the Lake County Departments. However, the reports were reviewed and used to validate and compare to the information obtained through the NFPA National Fire Protection Association Fire Analysis and Research Division.

### **The Model Description**

The Research Team evaluated all of the data obtained and the four objectives of the study to create a model to assess various feasibility options. The objectives of the Feasibility Study were to:

- Expand opportunity for improved level and quality of service provided
- Reduce overall costs of service
- Identify advantages and disadvantages of creating one or more districts for fire service
- Explore expanded shared services and equipment

The evaluation was broken into two parts, the identification of consolidation scenarios, and the evaluation of staffing options for each of those scenarios. The consolidation scenarios related to a one, two and three district layout which would provide oversight and service to the communities within that district. The configurations of the various districts were based on reasonable logistical service territories and in some cases historic connections. The staffing options focused on the manpower levels needed to effectively and efficiently provide an optimal level of service to each District. The Team utilized the National Fire Protection Association 2012 Fire Department Profile for Career Firefighters. The NFPA document recommends an average of one career firefighter per 1,000 people by the size of population protected to create the number of full-time personnel needed, with the results then broken into Low, Median and High ratio categories.

In addition to the NFPA 2012 Fire Department Profile document, the Team utilized the applicable standards of the NFPA 1710 “Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.” The edition of NFPA 1710 standardizes and refines terminology and definitions used in the document. Particular attention was paid to terminology for time frames for the various events that occur from event initiation to the end of the fire department’s involvement with the incident. This standard contains minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by substantially all career fire departments. The purpose of this standard is to specify the minimum criteria addressing the effectiveness and efficiency of the career public fire suppression operations, emergency medical service, and special operations delivery in protecting the citizens of the jurisdiction and the occupational safety and health of fire department employees.

The number of on-duty fire suppression personnel shall be sufficient to perform the necessary fire-fighting operations given the expected fire-fighting conditions. These numbers shall be determined through task analyses that take the following factors into consideration:

- 1) Life hazard to the populace protected
- 2) Provisions of safe and effective fire-fighting performance conditions for the fire fighters
- 3) Potential property loss
- 4) Nature, configuration, hazards, and internal protection of the properties involved
- 5) Types of fireground tactics and evolutions employed as standard procedure, type of apparatus used, and results expected to be obtained at the fire scene

On-duty personnel assigned to fire suppression shall be organized into company units and shall have appropriate apparatus and equipment assigned to such companies. The fire department shall identify minimum company staffing levels as necessary to meet the deployment criteria to ensure that a sufficient number of members are assigned, on duty, and available to safely and effectively respond with each company.

For example, the initial full alarm assignment to a structure fire in a typical 2000 ft. (186 mg), two-story single-family dwelling without basement and with no exposures shall provide for the following:

- 1) Establishment of incident command outside of the hazard area for the overall coordination and direction of the initial full alarm assignment with a minimum of one individual dedicated to this task
- 2) Establishment of an uninterrupted water supply of a minimum of 400 gpm (1520 L/min) for 30 minutes with supply line(s) maintained by an operator
- 3) Establishment of an effective water flow application rate of 300 gpm (1140 L/min) from two handlines, each of which has a minimum flow rate of 100 gpm (380 L/min) with each handline operated by a minimum of two individuals to effectively and safely maintain the line
- 4) Provision of one support person for each attack and backup line deployed to provide hydrant hookup and to assist in laying of hose lines, utility control, and forcible entry
- 5) Provision of at least one victim search and rescue team with each such team consisting of a minimum of two individuals
- 6) Provision of at least one team, consisting of a minimum of two individuals, to raise ground ladders and perform ventilation
- 7) If an aerial device is used in operations, one person to function as an aerial operator and maintain primary control of the aerial device at all times
- 8) Establishment of an IRIC consisting of a minimum of two properly equipped and trained individuals

Since one of the key objectives is to improve the level and quality of service, the Research Team determined that creating optimal service levels would permit a comparison with existing costs. As described in the each Department description and summarized in Appendix C, the resources available to provide service to their jurisdictions does vary throughout the county.

The service being provided in each jurisdiction meet that community's goals and are acceptable to each jurisdiction. If a consolidation were to occur, the Research Team determined that the level of service should be uniform across each district and should reflect an improved level if possible. Therefore permitting a second objective of the Feasibility Study, reduce overall costs of service, to be evaluated. The staffing options were applied to the various consolidation possibilities that were considered to determine financial feasibility of each option. Using this data the Research team identified four (4) possible staffing options that would be tested against the three (3) consolidation scenarios.

## SCENARIOS FOR CONSOLIDATION

Three scenarios have been considered to determine if the consolidation of fire services in Lake County is feasible. The possibilities are based on the forgoing information and standards established by NFPA.

The Fire & Emergency service traditionally & customarily function along a paramilitary model. This is especially important during times of delivering emergency services. The National Incident Management System (NIMS) standard of care supports this model while working in the field. As such, we are taught by NIMS and the Incident Management System that there are three, yet distinct areas of responsibility, which the Fire & EMS operates. They are Strategic, Tactical, & Task levels.

The Strategic level is the Chief Fire Executive and his/her Deputy (second in command.) These positions are essential in setting the tone, culture, and leadership models for the entire organization. These individuals also address the Fire & EMS cadre in unity, and take their direction from the Fire Board or Commission.

The second level, also known as mid-level managers, is the tactical level. Here, the Assistant Chiefs are assigned to areas of responsibility within the overall organization, have command, and control functions over their subordinates.

The last level of operation is the task level. Here, the immediate supervisors and Fire & EMS personnel are actually performing the work. The role of a firefighter varies widely depending on the type of department an individual is in and what the situation entails. In some instances, a firefighter will be required to carry hoses, while others may be responsible for the initial connections to a water supply such as a hydrant.

Others will be tasked with search and rescue, or entering a building to ensure it is structurally sound for those coming next. Others in command may study floor plans and give orders to entry teams. In rural areas or when facing a forest fire, more specialized roles exist such as those who dig trenches, pile sandbags, clear brush or even the famous smoke jumpers who risk even more than the average firefighter.

In addition to firefighting training and medical skills, some also need training on hazardous materials, especially when dealing with industrial accidents or other dangerous situations. In instances such as these, generally speaking, the more one knows about his surroundings the better of he will be. Having said that, in some cases specialized firefighters are needed to be brought in when chemical spills are on such a scale that the local department is incapable of completely overcoming the challenge.

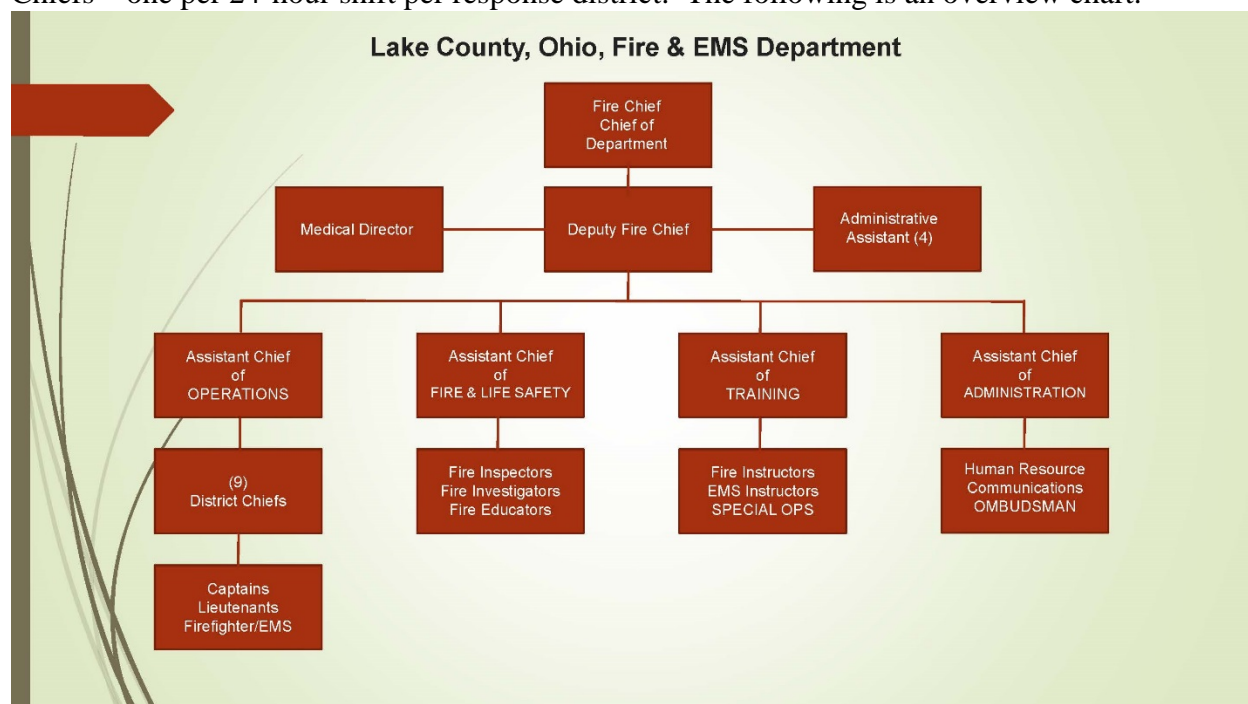
The scenarios of consolidation will address only the Strategic and Tactical levels of operation. No stations are proposed to be relocated or abandoned. Departments will operate as a single entity in each proposed scenario regardless of political boundaries. However if one of the scenarios is chosen it is likely that stations, equipment or manpower could be modified by the resulting organization to optimize efficiency and operations.



The Research Team chose to evaluate three different scenarios for consolidation across the entire County. The three scenarios are defined as follows:

### **Scenario A: Consolidation of Services into One District**

This possibility encompasses all Fire & EMS Services, under one administration umbrella; however, broken into three operational divisions. The organization chart would consist of a Fire Chief, a Deputy Fire Chief (second in command), four Assistant Fire Chiefs, and nine District Fire Chiefs – one per 24-hour shift per response district. The following is an overview chart.



For operational purposes the Department would operate in three districts composed of the following communities in Lake County, Ohio.

#### **Division One would consist of the jurisdictions:**

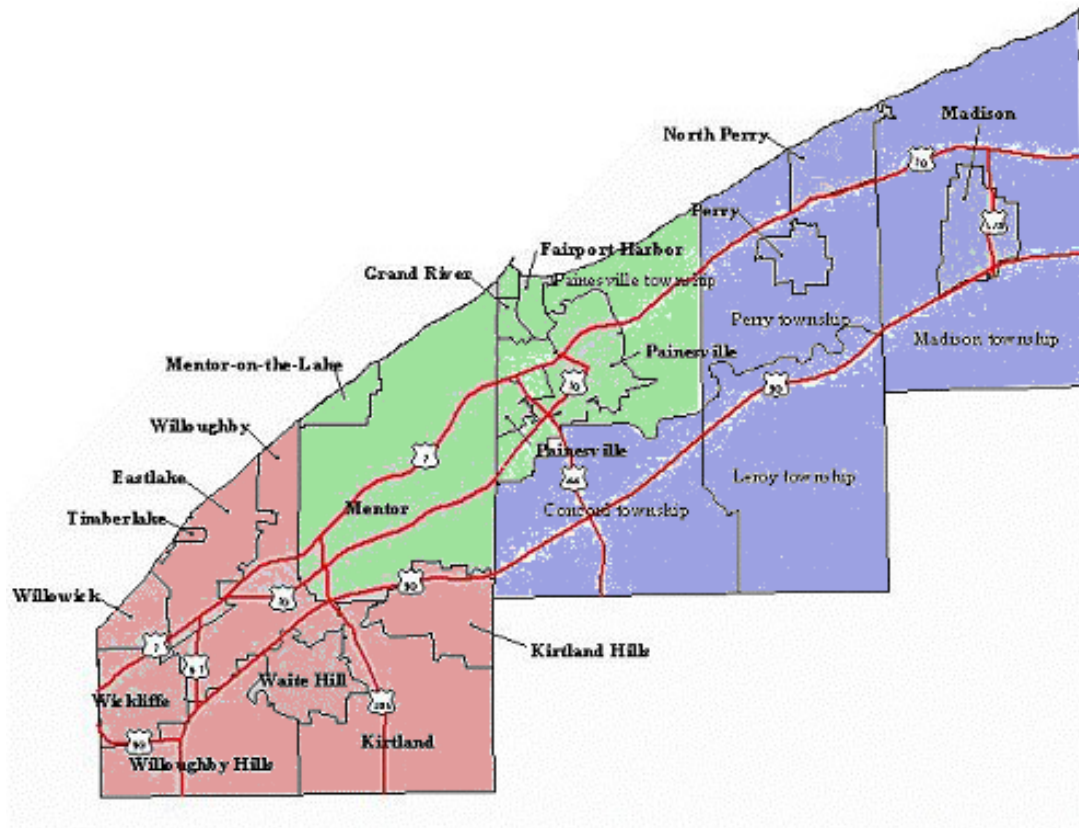
Willoughby Hills, Wickliffe, Willowick, Eastlake, Timberlake Village, Lakeline Village, Willoughby, Waite Hill Village, Kirtland and Kirtland Hills Village

#### **Division Two would consist of the jurisdictions:**

Mentor-on-the-Lake, Mentor, Painesville, Painesville Township, Grand River Village and Fairport Harbor Village

#### **Division Three would consist of the jurisdictions:**

Concord Township, Leroy Township, Perry Village, Perry Township, North Perry Village, Madison Village, and Madison Township.



The District would cover 240 square miles and a population of 233,231 from 28 stations.

Each of the three districts would be responsibility of the On-Duty District Chief for each region, for each 24-hour shift. The Assistant Chief of Operations will oversee the day-to-day operations of each of the three districts.

The Assistant Chief of Fire and Life Safety will oversee the daily operations of the fire inspection bureau, the fire investigations bureau and the fire safety educators, which could be civilian personnel.

The Assistant of Training will oversee all of the Fire & EMS training activities, and work in conjunction with the Assistant Chief of Operations. In addition, the Assistant Chief of Training will be responsible for all of the SPECIAL operations, identified by the Lake County, Ohio Fire Chiefs Association.

The Assistant Chief of Administrations would oversee all human resource components (hiring / grievances / forms / handbook or standard operation procedures) all issues regarding dispatch and communications, and all issues of equipment procurement, and specifications. In addition, the Assistant Chief of Administration will act as the department's ombudsman, a much-needed role for all Fire & EMS service activities.

The strategic level and tactical levels of operations are the main components to realign in order to have effective and efficient organizations.

## Scenario B: Consolidation of Services into Two Districts

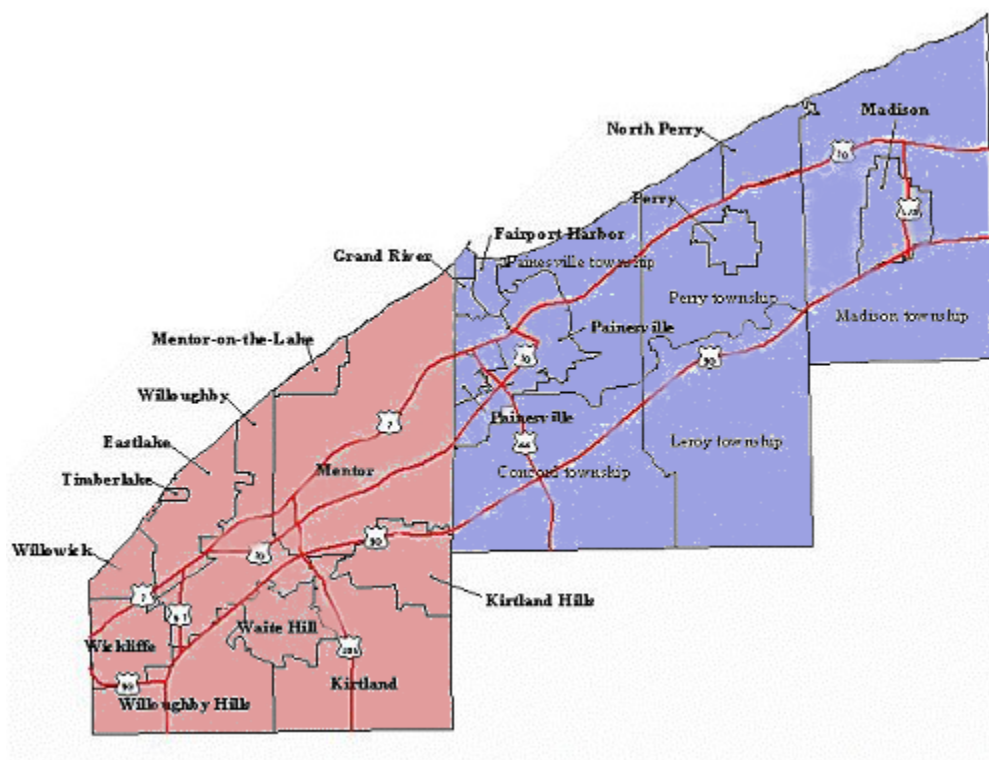
The Departments in Lake County are divided into two Districts consisting of the following:

### **West District would consist of the following jurisdictions:**

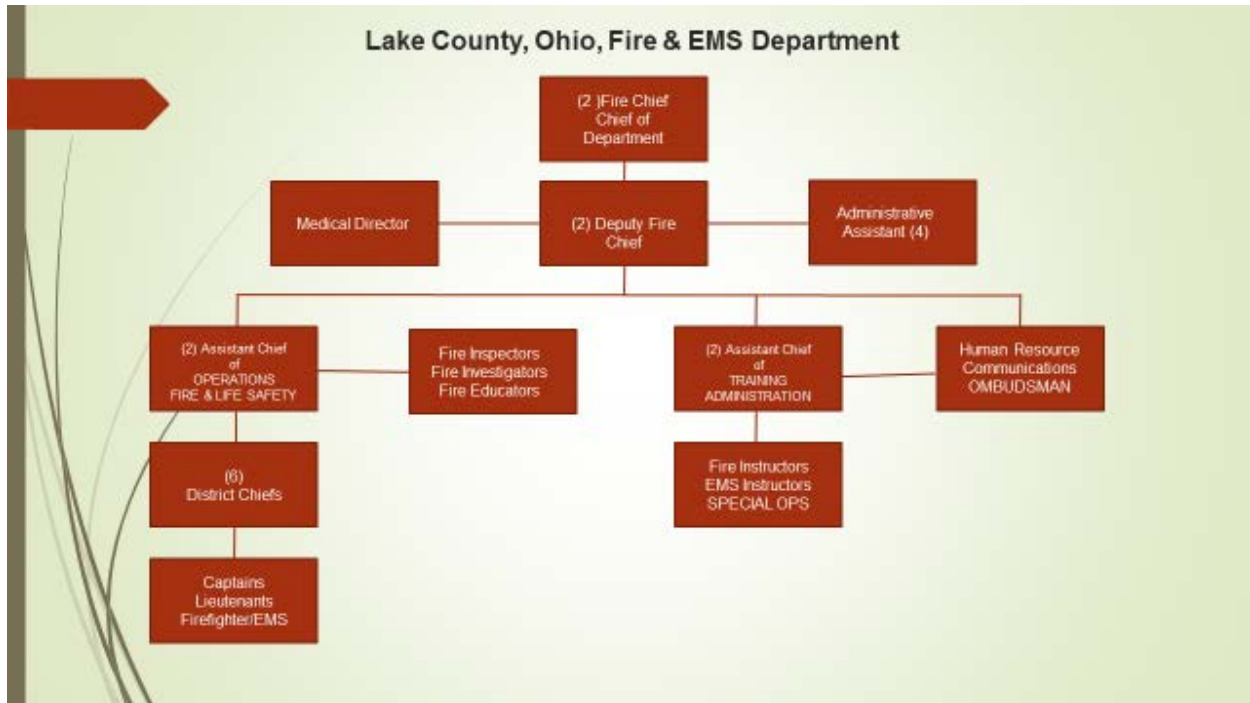
Willoughby Hills, Wickliffe, Willowick, Eastlake, Timberlake Village, Lakeline Village, Willoughby, Waite Hill Village, Kirtland, Kirtland Hills Village, Mentor-on-the-Lake, and Mentor

### **East District would consist of the following jurisdictions:**

Painesville, Painesville Township, Grand River Village, Fairport Harbor Village, Concord Township, Leroy Township, Perry Village, Perry Township, North Perry Village, Madison Village, and Madison Township



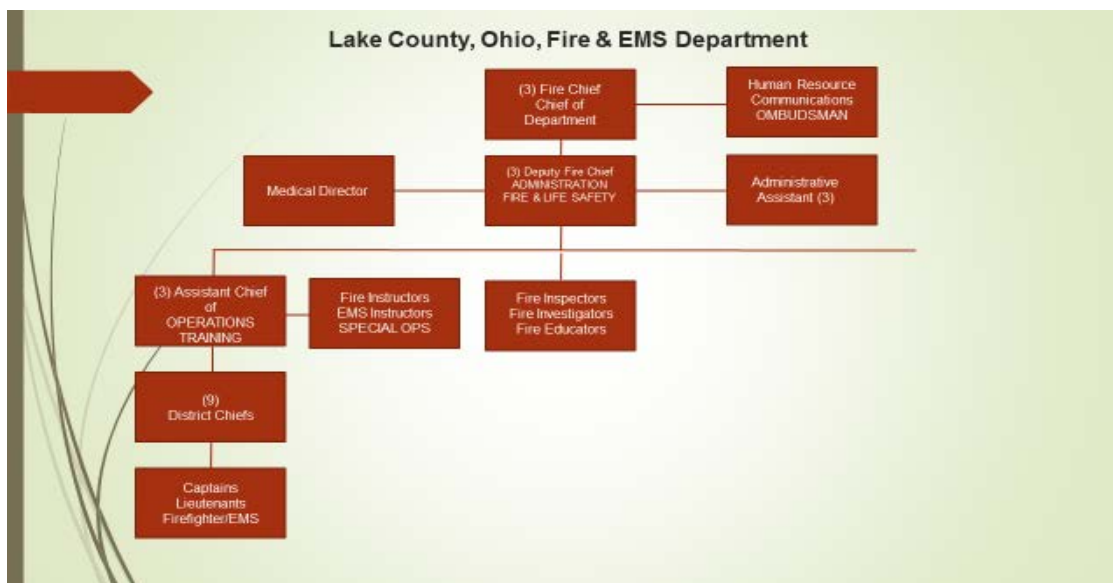
The organization chart would consist of 2 Fire Chiefs, 2 Deputy Fire Chiefs (second in command), four Assistant Fire Chiefs, and 6 District Fire Chiefs – one per 24 hour shift per response district



The operational justification would be similar to the One District model discussed in Scenario A. The West District would cover 91.41 square miles and a population of 140,737. The East District would cover 149.29 square miles and 92,494 population.

### Scenario C: Consolidation of Services into Three District

The organization chart would consist of three (3) Fire Chiefs, three (3) Deputy Fire Chiefs (second in command), three (3) Assistant Fire Chiefs, and nine District Fire Chiefs – one per 24 hour shift per response district.



**West District would consists of the jurisdictions:**

Willoughby Hills, Wickliffe, Willowick, Eastlake, Timberlake Village, Lakeline Village, Willoughby, Waite Hill Village, Kirtland and Kirtland Hills Village

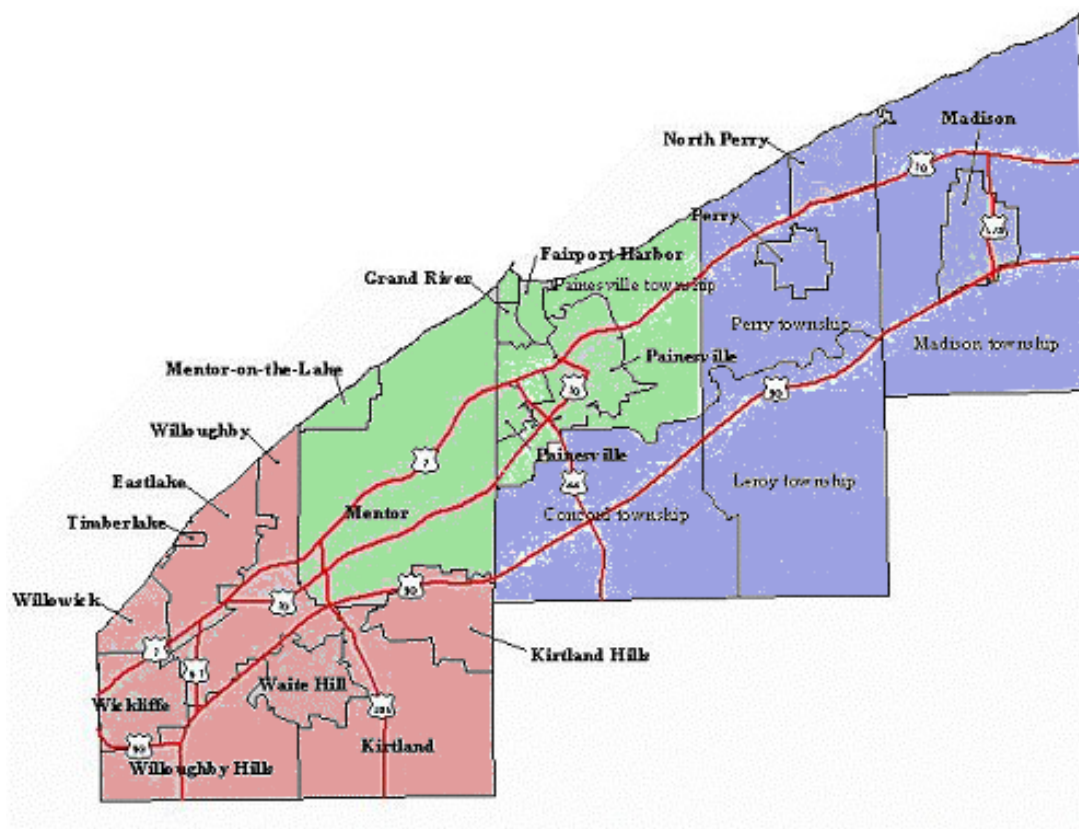
**Central District would consists of the jurisdictions:**

Mentor-on-the-Lake, Mentor, Painesville, Painesville Township, Grand River Village and Fairport Harbor Village

**East District would consists of the jurisdictions:**

Concord Township, Leroy Township, Perry Village, Perry Township, North Perry Village, Madison, and Madison Township.

The Districts in this scenario are similar to the operational Divisions in the Scenario A but would operate independently not under a single administrative structure.



The West District would cover 61.76 square miles and a serve a population of 86,135. The Central District would cover 55.34 square miles and a population of 94,564. The East District would cover 123.60 square miles and a population of 52,532.



## **Discussion and Financial Analysis of Scenarios and Staffing Options**

The evaluation of each scenario focused on the manpower levels needed to effectively and efficiently provide an acceptable level of service to each District. Manpower was the focus since it accounts for almost 90% of the expenses associated with providing fire service in Lake County currently as discussed on page 53. The current staffing level for each district was determined based on data collected from each community and then collated into the District Scenarios described above. The following Table provides a comparison of current fire department/district staffing levels (by FTE) throughout Lake County to ratios ascertained by the National Fire Protection Association (NFPA) through a national survey which they conducted in 2012 as discussed on Pages 55-56 of this report. The NFPA survey of career firefighters per 1,000 people was analyzed by the size of population protected, with the results then broken into Low, Median and High ratio categories.

The FTE ratio comparisons are broken out using the One District, Two District and Three District structural scenarios, with the underlying district information being matched up with the appropriate NFPA population protected category. For example, district one in the Two District structure is in the 100,000-249,999 category, while district two in that structure is in the 50,000-99,999 category.

In each Scenario the current number of FTEs per 1000 population exceeds the medium ratio outlined by the survey. Therefore, it appears using this standard, that all options should continue to be considered as feasible.



SOURCE: CSU Data Compilation and 2012 NFPA Survey of Fire Departments for U.S. Fire Experience

	THREE DISTRICT STRUCTURE			Career Firefighter Ratios by Population Protected (50,000 to 99,999)			Career Firefighter Ratios by Population Protected (50,000 to 99,999)			Career Firefighter Ratios by Population Protected (50,000 to 99,999)		
	District One	District Two	District Three	District One			District Two			District Three		
				LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
Population	86,135	94,564	52,532									
Area of Coverage (sq. miles)	61.76	55.34	123.60									
# of FTEs	158.00	178.67	100.33	25.84	110.25	298.03	28.37	121.04	327.19	15.76	67.24	181.76
# of FTEs (per day)	39.50	44.67	25.08	6.46	27.56	74.51	7.09	30.26	81.80	3.94	16.81	45.44
FTEs per 1,000	1.83	1.89	1.91	0.3	1.28	3.46	0.3	1.28	3.46	0.3	1.28	3.46
FTE ratio as % of Medium Ratio	143%	148%	149%									
# of Stations	8	12	8									

The next step in the analysis was to evaluate the staffing levels based on three different structural scenarios for operation. The numbers in the table above were broken out in order to provide a comparison to an “optimum” staffing level and its associated cost.

This optimization process first begins with an inventory of existing building facilities and staffed apparatus, with particular attention to the number of fire engines, ladder trucks, and EMS vehicles. The next step takes into account the size of the population being served in each district to determine the “right” amount of equipment and its physical deployment. The process then factors in four different potential staffing options for each district structure:

**Option 1:** Assumes per shift staffing of 4 for engines, 4 for ladder trucks and 2 for EMS.

**Option 2:** Assumes per shift staffing of 3 for engines, 3 for ladder trucks and 2 for EMS.

**Option 3:** Assumes per shift staffing of 3 for engines, 2 for ladder trucks and 2 for EMS.

**Option 4:** Assumes per shift staffing of 2 for engines, 2 for ladder trucks and 2 for EMS.

The per-shift staffing levels for each option were then multiplied by four (4) to determine the overall required staffing levels. The staffing was multiplied by four (4) to allow for days off, holidays and Kelly days that are the result of FSLA requirement’s or contractual obligations to maintain a uniform coverage 24/7. The resulting staffing in each case being multiplied by the average budgeted wage cost of an FTE in 2012 (exclusive of benefit costs) for each respective district structure. The resultant personnel cost was then compared to the amounts spent for current levels of staffing in terms of FTE. Each of these options assumes that the level of staffing at every station is the same, which is not the current condition.

It also assumes that all personnel are full-time which as previously discussed also is not a current condition. As discussed in the Description of Departments a majority of the work performed by the various Lake County Departments is associate with EMS service. While this model identifies optimum, personnel for various pieces of equipment it is assumed that all personnel will respond to EMS service requests. The model does not include additional EMS units and associated staffing since it is assumed that the ladder and engine personnel will staff those additional pieces of equipment.

The following is the worksheet for the One District Scenario followed by an explanation of the calculations. The detailed spreadsheet for the three Scenarios previously described and the four options are found in Appendix G.

LAKE COUNTY FIRE CONSOLIDATION STUDY  
ONE DISTRICT

COMPARISON OF OPTIMAL EQUIPMENT STAFFING OPTIONS  
SOURCE: CSU Data Compilation

	Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	
	ONE DISTRICT STRUCTURE	Staffing Option 1 4/4/2 (per day)	Staffing Option 1 4/4/2 (per day X 4)	Staffing Option 2 3/3/2 (per day)	Staffing Option 2 3/3/2 (per day X 4)	Staffing Option 3 3/2/2 (per day)	Staffing Option 3 3/2/2 (per day X 4)	Staffing Option 4 2/2/2 (per day)	Staffing Option 4 2/2/2 (per day X 4)	
1 Population	233,231									1
2 Area of Coverage (sq. miles)	240.70									2
3 # of FTEs	437.00									3
4 # of FTEs (per day)	109.25									4
5 FTEs per 1,000	1.87									5
6 2012 Budget – Personnel Services	\$29,737,488									6
7 Avg. 2012 Budget Wages per FTE	\$68,049									7
8 Projected FTE Staffing for Engines		112.00	448.00	84.00	336.00	84.00	336.00	56.00	224.00	8
9 Projected FTE Staffing for Ladders		32.00	128.00	21.00	84.00	12.00	48.00	12.00	48.00	9
10 Projected FTE Staffing for EMS		62.00	248.00	62.00	248.00	62.00	248.00	62.00	248.00	10
11 Projected FTE Staffing Total		206.00		167.00		158.00		130.00		11
12 Number of Engines	28	28		28		28		28		12
13 Number of Ladders	8	8		7		6		6		13
14 Number of EMS Vehicles	31	31		31		31		31		14
15 Total Apparatus	67	67		66		65		65		15
16 Current FTE per apparatus	1.63									16
17 Projected FTE per apparatus		3.07		2.53		2.43		2.00		17
18 Projected Personnel Services Cost		\$14,018,129	\$56,072,517	\$11,364,212	\$45,456,846	\$10,751,769	\$43,007,076	\$8,846,392	\$35,385,569	18
19 Difference Between 2012 Budget and Projected			-\$26,335,029		-\$15,719,358		-\$13,269,588		-\$5,648,081	19
20 Difference Expressed as FTEs			387.00		231.00		195.00		83.00	20

For illustration purposes, in One District Structure, overall staffing for Option 2 requires **336** FTE for engines (column E, row 8), **84** FTE for ladder trucks (column E, row 9) and **248** FTE for EMS (column E, row 10), for a total FTE count of **668** (column E, row 11). The current total number of FTEs is **437** (column A, row 3), a difference of **231** (column E, row 14) from the Option 2 “optimum” amount. From an expenditure perspective, the difference between the wage cost for the current number of FTEs and the “optimum” number is **\$15,719,358** (column E, row 19). In other words, in order to bring current staffing up to the levels required in the One District model structure under Option 2 (*i.e.*, per shift staffing of 3 for engines, 3 for ladder trucks and 2 for EMS) an additional 231 FTEs would be required at an approximate cost of \$16 million (again, using 2012 budget wage only figures).

### Overall Cost Comparison

OPTIONS	2012 Personnel Service Budget	Staffing Option 1	Staffing Option 2	Staffing Option 3	Staffing Option 4
ONE DISTRICT	\$29,737,488	\$56,072,517	\$45,456,846	\$43,007,076	\$35,385,569
TWO DISTRICTS					
West	\$18,571,159	\$33,529,253	\$26,592,166	\$24,279,804	\$20,233,170
East	\$11,166,328	\$22,332,657	\$18,610,547	\$18,362,407	\$14,888,438
THREE DISTRICTS					
West	\$11,583,867	\$21,114,897	\$17,302,485	\$15,249,648	\$12,903,548
Central	\$11,400,753	\$21,440,223	\$17,739,232	\$16,590,649	\$13,527,760
East	\$6,752,867	\$13,460,864	\$11,172,517	\$11,037,909	\$8,884,171

These Staffing Options do not address each District’s need for additional support personnel such as financial and purchasing support, human resources, maintenance personnel, or specialized training or education personnel. Currently many, if not all, of these support services are provided by the home community’s staff that are often in other departments. Many of these costs are not currently borne by the Fire Department but are a benefit to the department as a result of their situations within the community. Therefore, additional expenses will be required in the resulting district structure to provide for each of these additional support services.

The cost of optimizing the operations regardless of the Staffing Option exceeds the current budget of expenditures on Fire Service in Lake County. Staff Option 4 is closest to the current staffing levels in many of the departments in Lake County. The optimized Options utilize full-time personnel to fill all the positions. However many of the Lake County Departments are using part-time personnel to meet their desired staffing needs. For example a department will identify a part-time slot in their 24 hour manning that is filled by a firefighter/paramedic that may only work limited number of hours per month with that department. The part-time personnel may fill the entire 24-hour shift or split the hours among two or more persons. These part-time personnel generally cost 40% of the full-time personnel cost.

The Lake County Chiefs have been very cost efficient and effective at maintaining their desired level of service using part-time manpower to supplement their manning levels.

As indicated above these options looked at only the staffing costs and does not take into consideration potential other savings or “economies of scale” in such items as consolidated purchasing, insurance, training costs, and equipment needs. The reduced cost saving of these items may offset some of the additional cost of consolidation. It is unlikely that those savings would significantly reduce the additional expense associated with the proposed staffing levels.

### **Conclusion**

The Lake County Fire Departments are currently operating at an efficient and effective level of service. They have creatively implemented staffing formats that use part-time personnel to maintain their communities requested level of service in a cost efficient method. They have also developed a significant network of formal and informal shared services, which permit every department to meet the safety needs of their communities. The following summary of an incident that occurred within the County is an excellent example of how cooperative efforts and relationships that are part of the Lake County Fire Service each and every day can also be invaluable at the time of a disaster. This summary was provided by Chief James Powers of the City of Wickliffe.

*On the morning of January 24, 2011 at 6:44 a.m., the Fairport Harbor Fire Department received a call of a house explosion on High Street in Fairport Harbor. Due to the nature of the call, automatic aid was also dispatched which brought the Painesville City, Painesville Township, Grand River and Perry Fire Departments responding to the incident. On arrival, the first responding unit from Fairport Harbor found a small fire with a partial wall collapse in a single-family residential house. The fire was quickly extinguished and while searching for the cause of the fire, the responding units were called to the adjacent house due to an explosion and fire. Automatic Aid Departments quickly took care of that fire and within ten minutes were dispatched to six other working house fires within the Village of Fairport Harbor. This was the beginning of a very long day for the Fairport Harbor Fire Department but through cooperative efforts and developed relationships, the Lake County "system" proved effective in mitigating a potential disaster for a small community.*

*Several area Chiefs heard the initial radio traffic with multiple incidents and started responding to assist Fairport Harbor. Fairport Harbor had also initiated the County's mutual aid box alarm system (M.A.B.A.S) for additional resources. Incident Command was escalated to an area wide incident command with Fairport Harbor's Fire Chief Hogya and Police Chief Kish serving in a Unified Incident Command. The two Chiefs along with a command team of several area fire chiefs quickly developed a strategy for organizing a large area wide incident.*

*Unified Incident Command soon escalated the incident to five alarms with additional resources being called for from further outlying departments. Personnel responded to 23 structure fires and a total of 84 incidents in Fairport Harbor.*

*The community was quickly divided into four districts and a Chief and Aid were assigned to manage necessary resources (engines, ladder trucks, squads, police officers, salt trucks etc.) in*

*order to extinguish fires and mitigate any other problems in their districts. Twenty-nine departments responded utilizing forty-eight pieces of apparatus. Apparatus totals did not include Chief's cars or other support vehicles for incident command. Lake County's command van and other support vehicles were utilized along with Geauga County's communication van. The four districts were managed similar to small cities and given additional resources as requested. These resources were developed into task forces at the District level and utilized to not only extinguish fires but also to assist and assure the residents of the community that everything was going to improve and their safety was primary concern of all responders. The management of the incident command team had to manage many variables but through a cooperative system fire trucks were fueled, personnel were fed and most importantly residents were cared for. The last mutual aid units were released at 5:09 p.m.*

*Through incident command, the various fire chiefs also arranged for additional support from other police departments and service departments. This was one of the coldest days of the year and Fairport Harbor's Service Department was not equipped to keep up with the demand for road salt and snow plowing in the effected districts. At the request of the Mentor Fire Chief, Mentor's Public Works Department responded to assist Fairport Harbor. The Ohio Highway Patrol and the Lake County Sherrieff's office assisted Fairport Harbor's Police Department with traffic control and Village Law Enforcement.*

*The County's public transportation system, Lake Tran was utilized to shuttle residents to a warming center at the nearby Senior Center. Due to problems associated with the natural gas within the Village, the natural gas was shut off to the entire village and residents had no heat until East Ohio Service Representatives checked and restored service to each and every home and business in the Village.*

*The relationships and trust at the Chief's level along with automatic aid and subsequent box alarm system most likely saved many houses from being destroyed. If this system had not been in place, the Fairport Harbor Fire Department would have had to call for help once they arrived on scene. This would have been an overwhelming task to coordinate the response for 29 departments by looking at a map instead of a prearranged order as developed through the County's box alarm system. The auto aid and box alarm system saved valuable time in getting those departments to the scene of these multiple fires.*

*The relationship that the Chiefs have developed further assisted with the knowledge that those incoming Chief's thought of Fairport Harbor as their community and assisted Chief Hoya in the suppression and management efforts. Chief Hoya had stated that he had "complete trust in those Chiefs running his districts and knew those Chief's would treat his residents well."*

*Managing large-scale incidents such as this one is not uncommon for Lake County's Fire Service. At each incident in the county, personnel learn from challenges and work to improve the overall response of the county while maintaining their own autonomy as their community's fire service.*



This summary clearly indicates that the fire service in Lake County has reached a level of efficiency and cooperation which is a benefit to the all the residents of the County. It is also clear that the departments have benefited from the integrated communications system, the technology, planning and training that all started as a result of the construction of the Perry Nuclear Power Plant almost 40 years ago.

In addition to the extensive interagency cooperation, it is clear from the data that existing expenditures are far below the proposed expenditures in all three consolidation scenarios. Each scenario presented a uniform level of service delivery across the County and would increase the availability of personnel and equipment to respond to a call. However, the increase comes at a significant cost. The model used an average wage of firefighter in each district. It is reasonable to assume that existing firefighters will not take a pay cut should a consolidation occur. It is more likely that all firefighter wages will be elevated to the higher paying positions. Therefore, while the number of Administrative personnel such as a Chief will be reduced, the increased cost of personnel offset that savings. In addition, the increase in the number of personnel to provide a uniform level of service delivery also increases the required expenditure. Therefore there does not appear to be any cost savings by consolidation on the scale discussed in this feasibility study.

These conclusions are reached with the understanding that the data obtained and used by the model was limited by the lack of uniformity of collection and reporting by the communities evaluated. The lack of uniformity resulted in a broad based financial analysis based on numerous assumption. While the Research Team believes the result to be a valid indicator of the efficiency of the operations of the Fire Departments in Lake County, the actual numbers should not be viewed as potential costs or saving but rather a magnitude of impact as a result of the consolidation study.

Lake County has informally developed a form of operational consolidation through the cooperative and interdepartmental programs and shared services that have been developed over the last several years. The Fairport Harbor incident is just one functional implementation of those agreements and the ongoing quest by the Fire Chiefs to provide the highest level and quality of service at the lowest cost to the residents of the County. They are to be commended for taking the initiative and having the vision create this interdependent approach to service delivery.

## NEXT STEPS

The Lake County Fire Consolidation Feasibility Study results revealed that countywide or large regions for consolidation do not appear to make financial sense. However, that does not mean there are not further opportunities to assist and support the continued cost effective operations of the Fire Departments in Lake County. The shared services that currently exist in Lake County are extensive and have developed through an informal network of the Lake County Fire Chief's Association. The Chiefs are committed to meeting the needs of their service territories and have devised plans and programs to meet their objectives. They are to be commended that such an extensive network of mutual aid and programs are in place. This level of interdepartmental cooperation is not generally found in most areas of the State of Ohio or the nation without a mandate. It is this shared service base that needs to be built upon to continue to cost effectively provide Fire and EMS service to the residents of Lake County.

The Lake County Mayors and Managers Association and the Lake County Trustees Association should create an Oversight or Steering Committee to continue the discussions started by this Study. The Advisory Steering Committee created to assist in this report creation is a good basis for creating the committee. The Oversight Committee should continue to investigate mechanisms, cooperative actions, and formalizing existing shared programs to support the continued excellent delivery of Fire and EMS service in Lake County. The following are areas that the committee could consider further investigating:

- The feasibility study evaluated large-scale consolidations, while they do not appear to make sense financially, this study can be the basis to continue discussion on how to support the Fire Service in Lake County. As noted throughout this report the Fire Departments and Fire Chiefs in Lake County have an extensive network of shared programs and services which enables each community to meet its desired goals. Service delivery particularly as it relates to Fire response and more frequently in the delivery of EMS service, is an interconnected system of mutual aid, which relies on each community maintaining a consistent level of service. As budgets continue to be tight it is possible that the level of manpower in any community may be effected. This dynamic may create opportunities for smaller scale consolidations or joint ventures to continue to maintain the high level of service residents of Lake County experience.
- Investigating formalizing some of the shared services that are already in place. Many of the shared and cooperative programs in place are the result of an understanding between Fire Chiefs in Lake County. While this indicates a good working relationship between current Chiefs this may not always be the case. Creating a mechanism to formalize the Standard Operating Procedures, Training and Command Procedures and similar policies and programs could insure their continued existence.
- Evaluating Capital needs and planning across the county. This report did not look at the existing capital equipment in any detail. There could be significant savings on large purchases such as ladder trucks in the future. A review of the large equipment purchases and needs could identify opportunities for collaborative purchasing. This is already being implemented by the East End Fire COG.

- Investigate the establishment of a uniform data collecting and reporting system. One of the significant challenges in this study was the variations in how departments maintain their data. Creating a uniform system could enhance the ability to quickly respond to grant requests or support Lake County fire service to State and Federal legislators.
- Investigate and evaluate the Communications and Dispatching Service Delivery. A consistent comment received from Fire personnel during this study was the need to look at Fire Dispatching County-Wide. There are currently almost 10 separate dispatch entities in Lake County dispatching for Fire emergencies. In all cases, the dispatch also serves the Police agencies in those communities. A coordinated dispatching effort will support enhanced regional efforts by all Fire Agencies. Currently the East End Fire Departments of Painesville Township, Grand River, Fairport Harbor, Painesville City, Concord Township, Leroy Township, Perry Fire District, and Madison Fire District are dispatched by the Lake County Central Dispatch. As a result, there have been several regional efforts such as the *Closest Unit Response Study* in 2006 or the East End Lake County Council of Governments (COG) developed to enhance and support service deliver while reducing cost in their region. Dispatching is a significant operational and capital cost which if centralized could be spread over a larger pool of users. This feasibility study did not evaluate this aspect of service delivery but it is suggested that an analysis of this aspect of Fire Department service delivery could provide a benefit to most if not all the entities in the County.
- Investigate Closest Responder Protocol County-wide. The East End Fire Chiefs conducted a study in 2006 "... to evaluate the current response area assignments and to identify if moving to *closest unit dispatching* would be beneficial." The report found that closest unit dispatching would provide a 1% improvement in achieving the desired five minute response time. The report recommended proceeding with the program. While the program has not been uniformly implemented it is suggested that a similar study be performed county wide. Without a change in personnel, location of equipment or stations the County might be able to improve service delivery to the residents and businesses in the County through this approach. A key component to implementation of this program is a common dispatch for all entities.
- Investigate the creation of a Joint Support Services Division. This Division would work to improve procurement procedures and efficiencies through the elimination of duplication of purchasing and distribution of supplies. This could include daily supplies such as office items and equipment, tools and equipment but also larger items such as PPE, fleet vehicles. Purchasing in larger quantities usually results in a lower cost per item. This may also require some standardization of apparatus and equipment across participating departments. This may be as simple as expanding the existing East End Fire COG to be a regional purchasing entity for all Departments and Districts in the County.
- Investigate the Creation of a Regional Maintenance Center. Currently, equipment and apparatus are maintained by either a City Department or by contractual services to a qualified maintenance entity. A Regional Maintenance Center could provide the trained and qualified technicians to maintain the vehicles. It would allow for a preventative

maintenance program and recordkeeping. It could provide for mobile repairs during emergency incidents. The Center may provide some economies of scale that could reduce overall cost to individual departments.

- Investigate the creation of a Regional Fire Safety Education Program. Each Department or District provides its own Fire Safety programs for the community or communities it services. Generally, this function is an additional duty for shift personnel or will require overtime to meet the community needs. Creating a dedicated shared entity to provide education to the School Districts, community education such as CPR or Fire Extinguisher training and Fire Safety education to residents reduces the daily burden to the shift officers and could improve the quality of the service to the community. The message can be standardized creating a uniform message to the entire County. This could eliminate the duplication of efforts by various staff and ultimately reduce the cost of delivery of the service.

## APPENDICES

## APPENDIX A



August 30, 2013

Lake County, Ohio Fire Chiefs:

Chief R. Mike Warner, Chief Ted Whittington, Chief Jeffrey Hogya, Chief Bob Lloyd, Chief Tony Hutton, Chief Frank Huffman, Chief Patrick Shannon, Chief Gene Lutz, Chief Richard Harvey, Chief Bob Mahoney, Chief Mark Mlachak, Chief Frank Whittaker, Chief James McDonald, Chief Jim Powers, Chief Al Zwegat, Chief Richard Harmon, Chief Robert G. Posipanka

Dear Chiefs,

I appreciate the Lake County Fire Chiefs Association allowing me to address everyone regarding the status of the Lake County, Ohio Fire Consolidation Feasibility Study on August 22, 2013; it was my pleasure meeting you.

As I had expressed, this is a fire department feasibility study, authorized by the Lake County Mayors / Managers and the Lake County Township Association. Your participation will ensure our success.

I placed together a list of information I need to conduct my portion of the study. Please take a few moments and review the list, and provide me with the appropriate documentation. I request that this information be forwarded to me by no later than September 30, 2013.

Once I receive all of this information, I will then contact you for a meeting. You may bring whomever you wish to our meeting. I would like to start meeting with the Lake County Fire Chiefs / Department in mid-October.

Please feel free to contact me should you have any questions.

Sincerely,

Bernard W. Becker, III, MS  
Director, Center for Emergency Preparedness

Maxine Goodman Levin College of Urban Affairs, Center for Emergency Preparedness  
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## **LAKE COUNTY, OHIO FIRE CONSOLIDATION FEASIBILITY STUDY INFORMATION**

- **Fire Department Overview**
  - When was the FD first established (year)
  - Total number of personnel (breakdown by classification: career, part-time, volunteer, other)
  - Mission & Vision statements (If applicable)
  - Ohio fire incident reporting system information
  - Ohio department of public safety (EMS) reporting system information
  - Request for service (run) data for each apparatus
  - Response times for each apparatus
  - Annual request for service (service demand) for the past 3 years
- **Organizational Structure & Staffing**
  - Identify all positions (Chief, Assistant Chief, Deputy Chief, Captains, Lieutenants, Firefighters etc...)
  - Job descriptions / essential job functions for each position
  - Current pay rate for each position
  - Current copy of standard operating procedures, general operational guidelines, field operation guides (or other terms you may use for having a procedure manual)
  - Insurance Service Organization (ISO) "Public Protection Classification" (PPC) rating document from ISO
- **Human Resources**
  - Hours of work (career, part-time, volunteer, other)
  - FLSA cycle (7 day, 14 day, 21 day, 28 day)
  - Staffing model (authorized daily staffing) (apparatus staffing)
- **Fire / EMS apparatus / fleet**
  - Number of engines, pumpers, ladders, quints, hose tenders, water tenders (tankers), support vehicles (air, rescue, etc.), ambulances (medic units), utility vehicles, staff vehicles, other vehicles (rolling stock)
  - Age of each apparatus / fleet / vehicle
  - Cost per unit mile for each apparatus / fleet / vehicle (for the past 3 years) (if available)
  - Replacement schedule (if available)
  - Vehicle maintenance (emergency vehicle technician) records (for the past 3 years) (if available)
  - Pump test, aerial test, hose test records (for the past 3 years) (if available)
- **Fixed facilities**
  - Number of fire stations with physical location (address)
  - Map illustrating your jurisdiction and station location (PDF please)
  - Age of facility
- **Fuel depot**
  - Refueling locations
  - Current costs per gallon of fuel
  - Fuel consumption of each apparatus / fleet / vehicle (1 year average)

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- **Capital purchases, actual costs**
  - Fire equipment (including apparatus) for the past 3 years
  - EMS equipment (including apparatus) for the past 3 years
- **Public / private water system**
  - Responsible for installation / maintenance of water and hydrant system
  - Water flow data for critical (target) areas
  - Deficiencies (both in public and private systems)
  - Non-hydrant areas (identify)
- **Emergency Medical Service**
  - Medical Control (base hospital and medical advisor)
  - EMS protocols / standing orders
  - Base hospital communication method (telemetry, VHF/UHF, cellular...as applicable)
- **Communication (911) System**
  - Public safety answering point and when first established
  - Primary communications / dispatch center
  - Means of alerting emergency service personnel
  - Communication protocols
  - Operational practices
  - Location(s) of centers and towers
  - Type of communication equipment (VHF/UHF, Trunked, other)
  - Power back-up / redundancy features
- **Fire / EMS (Initial & recertification) Training**
  - Level of certification for each employee
  - Certification number and expiration date
  - Explain your means of training record keeping
  - Annual training requirements (for each discipline) (Fire, EMS, Rescue, Inspector, Instructor, Haz Mat, Confined Space, other)
  - Compliance percentage of Fire / EMS training requirements
  - Deficiency percentage of Fire / EMS training requirements
- **Fire & Life Safety (Inspections / Investigations)**
  - Provide an outline of the scope, purpose and activities (for the past 3 years)
  - Staffing
- **Specialized activities (Haz Mat teams, etc.)**
  - Provide an outline of the scope, purpose and activities (for the past 3 years)
  - Staffing
- **Collaboration of Services**
  - Automatic response agreements
  - Mutual aid response agreements
  - Council of Government (COG) agreements

I request that this information be collected and sent via e-mail to [b.becker64@csuohio.edu](mailto:b.becker64@csuohio.edu). Please use this document as a check-off sheet, ensuring that everything requested has been collected and delivered. Thank you.

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To properly determine how the fire department will do its job, a needs assessment and analysis are required and an integral part to the overall process. Identifying key areas in this process is critical and serves as a single point of collection to coordinate various data points, administrative processes, and planning considerations.

This integration of benchmark performance, budgetary commitments, mission statements, emergency service organization activities, will serve the Lake County Fire Consolidation Feasibility Study committee with a summary report of (in)efficiency and (in)effectiveness of the overall process.

#### **LAKE COUNTY, OHIO FIRE CONSOLIDATION FEASIBILITY STUDY INFORMATION**

- **Fire Department Overview**

- When was the FD first established (year)
- Total number of personnel (breakdown by classification: career, part-time, volunteer, other)
- Mission & Vision statements (If applicable)
- Ohio fire incident reporting system information
- Ohio department of public safety (EMS) reporting system information
- Request for service (run) data for each apparatus
- Response times for each apparatus
- Annual request for service (service demand) for the past 3 years

The purpose of this information is to first identify if the elected officials in each jurisdiction had appropriately, according to the Ohio Revised Code, enabled / established, through legislation, codified Fire/EMS department.

In personnel classification, I am looking for the exact numbers of personnel, and their Fair Labor Standard Act (FLSA) job classification.

Some, not all, FIRE/EMS organizations have guiding principles in the form of a Mission / Vision statement.

It is a requirement of the State of Ohio that all Fire & EMS organizations complete reports and submit them according to the Ohio Revised Code.

Identifying the run data, number of actual requests for service (both Fire & EMS, and other), response times and service demand, will help establish how active the organization is compared to one another.

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- **Organizational Structure & Staffing**

- Identify all positions (Chief, Assistant Chief, Deputy Chief, Captains, Lieutenants, Firefighters etc...)
- Job descriptions / essential job functions for each position
- Current pay rate for each position
- Current copy of standard operating procedures, general operational guidelines, field operation guides (or other terms you may use for having a procedure manual)
- Insurance Service Organization (ISO) "Public Protection Classification" (PPC) rating document from ISO

Along with identifying the number of personnel, it is best to identify the Executive, the Supervisor / Managers, and the persons responsible for completing the tasks.

The Job Descriptions, although different from each organization, will identify the essential job functions for that jurisdiction.

Pay rates help identify static and fluid costs the organization encumbers.

Having a digital copy of the organization's standard operational procedures will help identify compliance with national recognized best practices and similarities between the organizations.

ISO classification helps identify areas of strength and weaknesses identified by the Insurance Industry.

- **Human Resources**

- Hours of work (career, part-time, volunteer, other)
- FLSA cycle (7 day, 14 day, 21 day, 28 day)
- Staffing model (authorized daily staffing) (apparatus staffing)

While some Fire/EMS organizations are all full time, others are a combination of full and part time employees. Pay rates are different, scheduling requirements are different, staffing models are different. To help identify similarities, this information is requested.

- **Fire / EMS apparatus / fleet**

- Number of engines, pumpers, ladders, quints, hose tenders, water tenders (tankers), support vehicles (air, rescue, etc.), ambulances (medic units), utility vehicles, staff vehicles, other vehicles (rolling stock)
- Age of each apparatus / fleet / vehicle
- Cost per unit mile for each apparatus / fleet / vehicle (for the past 3 years) (if available)
- Replacement schedule (if available)
- Vehicle maintenance (emergency vehicle technician) records (for the past 3 years) (if available)
- Pump test, aerial test, hose test records (for the past 3 years) (if available)

The number pieces of apparatus, age of the vehicles, unit cost analysis (if available), helps identify the usage and longevity of these capital purchases. Some organizations are in the process of purchasing apparatus / equipment, while others may have dated, inefficient apparatus, which may show where consolidation may be of benefit. Pump and hose / aerial / ladder testing is a safety issue and a requirement under the Ohio Administrative Code. I have found a number of Fire/EMS organizations in violation of not having these critical safety items part of their annual process.

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- **Fixed facilities**

- Number of fire stations with physical location (address)
- Map illustrating your jurisdiction and station location (PDF please)
- Age of facility

Each fire department / organization has from one to many fire stations to house its equipment and personnel. While the National Fire Protection Association has identified safe working standards, it is equally important to ensure that the facilities housing equipment and personnel also meet these safety standards.

- **Fuel depot**

- Refueling locations
- Current costs per gallon of fuel
- Fuel consumption of each apparatus / fleet / vehicle (1 year average)

One of the major expenses of any Fire/EMS organization is the variable operating costs, such as fuel. Identifying the consumption and cost of the fuel can assist in identifying areas where a group purchasing, such as a fleet purchase at the commercial vendor, may be of assistance.

- **Capital purchases, actual costs**

- Fire equipment (including apparatus) for the past 3 years
- EMS equipment (including apparatus) for the past 3 years

Fire/EMS capital purchases should be planned items; unfortunately, in some cases, they are an emergency expense. Taking that into consideration, it is important to identify what equipment has recently been purchased, identify if there are loans which still need to be paid, and which standard they meet to ensure safety and reliability for the personnel operating such equipment.

- **Public / private water system**

- Responsible for installation / maintenance of water and hydrant system
- Water flow data for critical (target) areas
- Deficiencies (both in public and private systems)
- Non-hydrant areas (identify)

This information is in line with the Insurance Service Organization "Public Protection Classification" (PPC) rating system. This information may be captured in the written report from ISO, along with the requested communication information.

- **Emergency Medical Service**

- Medical Control (base hospital and medical advisor)
- EMS protocols / standing orders
- Base hospital communication method (telemetry, VHF/UHF, cellular...as applicable)

As fire departments evolve, a number of organizations have identified that the emergency medical service portion has dominated their workload / request for service. As such, there may be a number of different protocols, which the individual organization must operate. Each Fire/EMS organization has a medical director; consolidation of protocols and establishing a medical director team is one method which to help in consolidation efforts. This is true for purchasing expensive pharmaceuticals and other life saving devices.

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- **Communication (911) System**

- Public safety answering point and when first established
- Primary communications / dispatch center
- Means of alerting emergency service personnel
- Communication protocols
- Operational practices
- Location(s) of centers and towers
- Type of communication equipment (VHF/UHF, Trunked, other)
- Power back-up / redundancy features

This information is in line with the Insurance Service Organization "Public Protection Classification" (PPC) rating system. Obtaining a copy of this report will identify all of these requested items.

- **Fire / EMS (Initial & recertification) Training**

- Level of certification for each employee
- Certification number and expiration date
- Explain your means of training record keeping
- Annual training requirements (for each discipline) (Fire, EMS, Rescue, Inspector, Instructor, Haz Mat, Confined Space, other)
- Compliance percentage of Fire / EMS training requirements
- Deficiency percentage of Fire / EMS training requirements

In order to be a 'certified' emergency service responder in the State of Ohio, the employee must take the initial training, for each discipline, and recertify by meeting the Ohio Department of Public Safety, Division of EMS / Fire bench marks. Identifying each employee's certification, the level of this certification, when they last recertified, and meeting each discipline criteria is key for meeting these state mandate requirements. The only way I can verify this activity is with their certification number.

While the State has certain minimum requirements, each Fire/EMS organization MAY have their own requirements above the minimum. Training requirements, both Fire & EMS, the level of participation or deficiency, will help determine compliance.

- **Fire & Life Safety (Inspections / Investigations)**

- Provide an outline of the scope, purpose and activities (for the past 3 years)
- Staffing

Most Fire/EMS organizations perform Fire and Life Safety inspections / prevention educational opportunities for their communities. Identifying the staffing, efforts, and abilities will help identify if consolidation of this service can be borne in a countywide effort.

- **Specialized activities (Haz Mat teams, etc.)**

- Provide an outline of the scope, purpose and activities (for the past 3 years)
- Staffing

While some organizations have specialized teams, some do not. Specialized teams such as confined space rescue, trench rescue, high angle rescue, SCUBA dive teams, are examples of having a countywide teams approach, thus not requiring each jurisdiction duplicating services.

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- **Collaboration of Services**

- Automatic response agreements
- Mutual aid response agreements
- Council of Government (COG) agreements

Currently, I have no idea what services are offered to each jurisdiction in a team's / specialized approach. Obtaining a copy of the appropriate agreements will assist me in my evaluation.

**It is my hope that this commentary will assist in addressing questions, comments, and concerns. Please feel free to contact me should you have any questions. Thank you.**

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## APPENDIX B

### NFPA FIRE DEPARTMENT PROFILE, 2012

#### SOURCE



#### National Fire Protection Association Fire Analysis and Research Division

#### ABSTRACT

NFPA estimates that there were approximately 1,129,250 firefighters in the U.S. in 2012.

Of the total number of firefighters 345,950 or 31% were career firefighters and 783,300 (69%) were volunteer firefighters. Most of the career firefighters (72%) are in communities that protect 25,000 or more people. Most of the volunteer firefighters (95%) were in departments that protect fewer than 25,000 people.

There are an estimated 30,100 fire departments in the U.S. Of these, 2,610 departments are all career, 1,995 mostly career, 5,445 are mostly volunteer and 20,050 are all volunteer. In the U.S., 13,600 or 45% of departments provide EMS service, 4,550 departments or 15% provide EMS service and advance life support, while 11,950 departments or 40% provide no EMS support.

Keywords: fire departments, firefighters, career, volunteer, EMS, fire stations, pumpers, aerial apparatus.

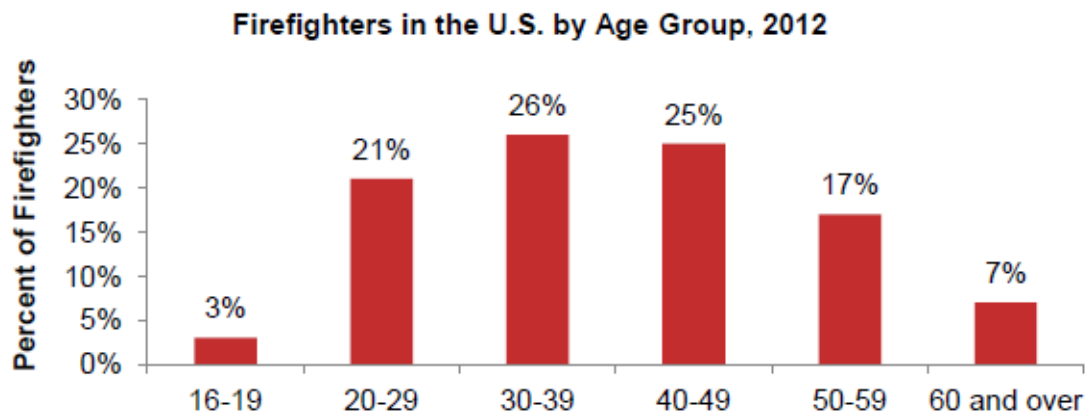
There are **1,129,250** firefighters in the United States

**31%** (345,950) are career firefighters.

**69%** (783,300) are volunteer firefighters.

Firefighters in smaller (less than 10,000 people) communities are more likely to be volunteers.

Departments protecting larger communities tend to have a higher proportion of firefighters in the age groups 30-39 and 40-49 than smaller communities.



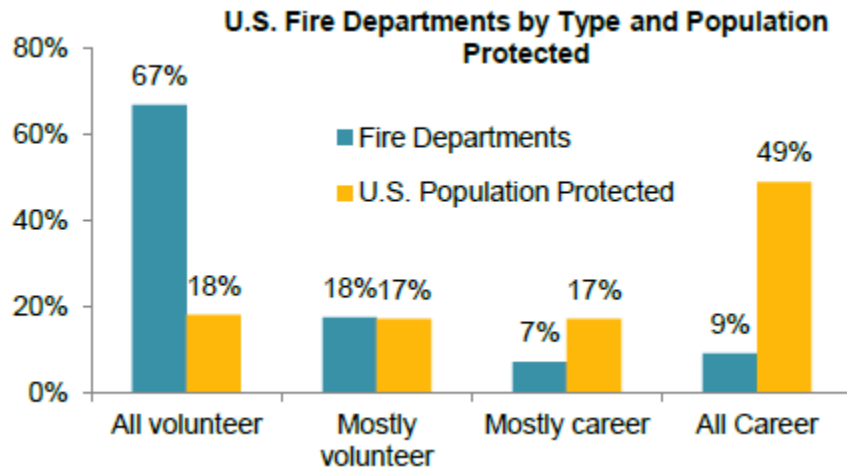
30,100 fire departments protected the United States in 2012

All career 2,610

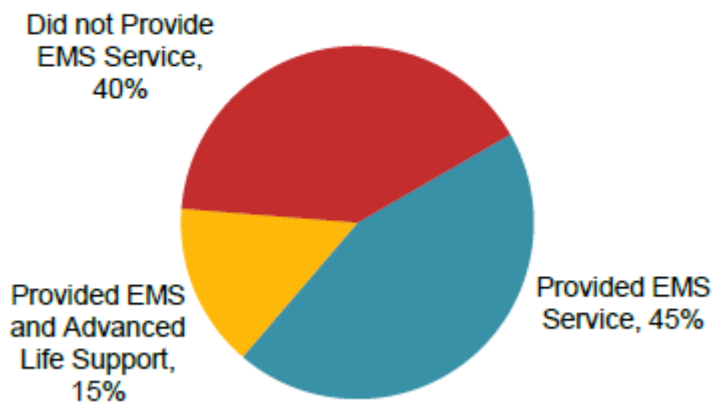
Mostly career 1,995

Mostly volunteer 5,445

All volunteer 20,050



**Fire Department Provision of Emergency Medical Service  
2010-2012 Annual Averages**



## **FIREFIGHTERS**

There were approximately 1,129,250 firefighters in the U.S. in 2012, according to estimates based on NFPA's 2012 National Fire Experience Survey (see Table 1). This is an increase of 2.6% from a year ago.

Career firefighters include full-time (career) uniformed firefighters regardless of assignments, e.g., suppression, prevention/inspection, administrative. Career firefighters included here work for a public fire department that protects people in the community in their residences and in public buildings; they do not include career firefighters who work in private fire brigades.

Volunteer firefighters include any active part-time (call or volunteer) firefighters. Active volunteers are defined as being involved in firefighting. Of the total number of firefighters, 345,950 or 31% were career firefighters, while 783,300 or 69% were volunteers.

Most of the career firefighters (72%) are in communities that protect 25,000 or more people. Most of the volunteers (95%) are in departments that protect fewer than 25,000 people and almost half are located in the small, rural departments that protect fewer than 2,500 people (see Table 1).

Since 1986, the number of career firefighters in the U.S. has gone up quite steadily from 237,750 in 1986 to 345,950 in 2012 for an overall increase of 45% (Table 2, Figure 1). However, when the rates of career firefighters per 1,000 people protected for mostly or all career departments are examined, the rates do not increase but stay in a range of 1.64 to 1.77 career firefighters per 1,000 people protected (Table 2, Figure 1).

Essentially what this means is that even though the number of career firefighters has gone up, the number of people protected by career firefighters has also gone up as the population in the U.S. has increased.

**Table 1.**  
**Career and Volunteer Firefighters**  
**in the U.S., by Population Protected, 2012**

Population Protected	Career	Volunteer	Total
1,000,000 or more	40,850	300	41,150
500,000 to 999,999	35,900	6,400	42,300
250,000 to 499,999	25,850	2,100	27,950
100,000 to 249,999	52,950	2,550	55,500
50,000 to 99,999	43,300	7,350	50,650
25,000 to 49,999	49,050	23,200	72,250
10,000 to 24,999	56,500	71,550	128,050
5,000 to 9,999	21,600	104,000	125,600
2,500 to 4,999	10,050	174,450	184,500
Under 2,500	9,900	391,400	401,300
<b>Total</b>	<b>345,950</b>	<b>783,300</b>	<b>1,129,250</b>

Source: NFPA Survey of Fire Departments for U.S. Fire Experience, 2012

Note the number of volunteer firefighters for communities of 25,000 or more and the number of career firefighters for communities of less than 10,000 may change considerably from year to year because of their small size and sample variability.

**Table 2.**  
**Number of Firefighters in the U.S., 1986-2012**

Year	Total		Career		Volunteer	
	Number	Rate per 1,000 People	Number	Rate per 1,000 People	Number	Rate per 1,000 People
1986	1,045,950	4.35	237,500	1.73	808,200	7.88
1987	1,060,000	4.36	243,200	1.73	816,800	8.05
1988	1,040,750	4.25	252,500	1.77	788,250	7.77
1989	1,020,700	4.12	250,600	1.75	770,100	7.45
1990	1,025,650	4.11	253,000	1.73	772,650	7.56
1991	1,033,600	4.09	261,800	1.73	771,800	7.61
1992	1,058,300	4.14	253,000	1.72	805,300	7.34
1993	1,055,050	4.09	259,650	1.73	795,400	7.25
1994	1,073,600	4.12	265,700	1.76	807,900	7.19
1995	1,098,850	4.18	260,850	1.70	838,000	7.42
1996	1,081,800	4.07	266,300	1.74	815,500	6.98
1997	1,079,050	4.03	275,700	1.73	803,350	7.12
1998	1,082,500	4.00	278,300	1.70	804,200	7.18
1999	1,065,150	3.90	279,900	1.69	785,250	6.93
2000	1,064,150	3.86	286,800	1.64	777,350	7.25
2001	1,078,300	3.85	293,600	1.70	784,700	7.04
2002	1,108,250	3.89	291,650	1.68	816,600	7.12
2003	1,096,900	3.77	296,850	1.67	800,050	7.05
2004	1,100,750	3.76	305,150	1.71	795,600	6.88
2005	1,136,650	3.82	313,300	1.68	823,350	7.30
2006	1,140,900	3.81	316,950	1.74	823,950	7.26
2007	1,148,800	3.81	323,350	1.74	825,450	7.29
2008	1,148,850	3.81	321,700	1.73	827,150	7.01
2009	1,148,100	3.81	335,900	1.72	812,150	7.27
2010	1,103,300	3.57	335,150	1.66	768,150	6.59
2011	1,100,450	3.54	344,050	1.69	756,400	6.37
2012	1,129,250	3.60	345,950	1.67	783,300	6.60

Source: NFPA Survey of Fire Departments for U.S. Fire Experience (1986-2012).

The rates listed above are based on data reported to the NFPA, and do not reflect recommended rates or some defined fire protection standard.

Note that the rates per 1,000 people protected for career firefighters are based on population protected for departments that are comprised of all or mostly career firefighters, while the rates per 1,000 people protected for volunteer firefighters are based on population protected for departments that are comprised of all or mostly volunteer firefighters.

A good way to develop a sense of the size of departments relative to the population they protect is to examine the rate of firefighters per 1,000 people. Tables 3 and 4 provide the range of rates for career firefighters in departments protecting at least 10,000 people and for volunteer firefighters in departments protecting fewer than 25,000 people. It is important to note that the rates are based on data reported to the NFPA and do not reflect recommended rates or some defined fire protection standard.

Fire departments protecting communities of 10,000 people or more had median rates of career firefighters per 1,000 people of 1.00 to 1.34 (Table 3). However, ranges for departments varied considerably within community size and particularly for communities of 100,000 to 249,999, 50,000 to 99,999, and 25,000 to 49,999.

**Table 3.  
Career Firefighter Rates  
By Population Protected, 2012**

Population Protected	Career Firefighters Per 1,000 People		
	Low	Median	High
1,000,000 or more	0.58	1.14	1.61
500,000 to 999,999	0.38	1.30	3.16
250,000 to 499,999	0.57	1.18	2.44
100,000 to 249,999	0.18	1.34	3.25
50,000 to 99,999	0.03	1.28	3.46
25,000 to 49,999	0.00	1.20	6.60
10,000 to 24,999	0.00	1.00	7.69

**Table 4.  
Volunteer Firefighter Rates  
By Population Protected, 2012**

Population Protected	Volunteer Firefighters Per 1,000 People		
	Low	Median	High
10,000 to 24,999	0.00	1.14	19.33
5,000 to 9,999	0.00	3.60	13.00
2,500 to 4,999	0.53	7.20	18.00
Under 2,500	2.50	20.00	*

The rates of a particular size of community may vary widely because departments face great variation in their specific circumstances and policies including unusual structural conditions, types of service provided to the community, geographic dispersion of the community, and other factors.

Volunteer rates are shown only for communities under 25,000, where departments are comprised of all volunteer or mostly volunteers. In addition, some of these departments, particularly those with population protected of 5,000 or more, have some career firefighters, who are not reflected in these figures.

The low and high values are the lowest and the highest values by size of community. The median value is chosen so that half of the departments had higher values, and half had lower. \*Because there are a minimum number of firefighters to form even a single company, smaller communities of under 100 people can have very high rates.

Length of workweek and its effect on rate of career firefighters per 1,000 population by size of community can be seen in Table 5. Tables 6 and 7 provide median rates for career and volunteer firefighters by region and size of community.

**Table 5.**  
**Career Firefighters per 1,000 People For All Career Departments**  
**By Work Week and Population Protected, 2010-2012**

Population Protected	Career Firefighters Per 1,000 People		
	40-45 Hour	46-51 Hour	52-60 Hour
1,000,000 or more	*	1.51	1.00
500,000 to 999,999	2.37	1.34	1.23
250,000 to 499,999	1.87	1.85	1.22
100,000 to 249,999	1.93	1.56	1.30
50,000 to 99,999	2.05	1.61	1.40
25,000 to 49,999	2.05	1.58	1.62

**Table 6.**  
**Median Rates of Career Firefighters per 1,000 People**  
**By Region and Population Protected, 2012**

Population Protected	Northeast	Midwest	South	West
250,000 or more	1.71	1.43	1.28	0.75
100,000 to 249,999	1.99	1.35	1.43	0.85
50,000 to 99,999	2.03	1.18	1.58	0.90
25,000 to 49,999	1.67	1.04	1.53	0.97

**Table 7.**  
**Median Rates of Volunteer Firefighters per 1,000 People**  
**By Region and Population Protected, 2012**

Population Protected	Northeast	Midwest	South	West
10,000 to 24,999	1.87	1.33	0.80	1.14
5,000 to 9,999	4.78	3.80	2.57	3.60
2,500 to 4,999	8.79	7.71	6.13	7.20
Under 2,500	17.71	22.19	14.54	20.00



## **DATA SOURCES**

The report is based on two data sources: the annual NFPA Survey for U.S. Fire Experience, 2012, and the NFPA Fire Service Survey, 2010-2012.

The annual fire experience survey is a sample survey of fire departments in the United States, which serves as the basis for making national estimates of the fire problem. The sample is stratified by the size of the community protected by the fire department.

All U.S. fire departments that protect communities of 50,000 or more are included in the sample, because they constitute a small number of departments with a large share of the total population protected.

For departments that protect less than 50,000 population, a sample was selected stratified by size of community protected. Survey returns in recent years have ranged from 2,500 to 3,500 departments annually. The survey also includes questions on the number of career and volunteer firefighters. The national projections are made by weighing sample results according to the proportion of total U.S. population accounted for by communities of each size.

The NFPA Fire Service Survey is a three-year cycle survey, which attempts to survey about one third of the states in the country each year. The survey includes questions on the number of career firefighters, the number of volunteer firefighters, length of workweek, number of apparatus and stations, etc. In recent years, the survey has had a response rate of about 18% from departments.

## APPENDIX C

### LAKE COUNTY FIRE CONSOLIDATION STUDY

#### OPERATIONAL EXPENDITURES ONLY SOURCE: 2012 BUDGET DOCUMENTS

	Concord Budget 2012 All Fire Funds	Eastlake Budget 2012 All Fire Funds	Fairport Harbor Budget 2012 Fire Fund	Grand River Budget 2012 Fire Fund	Kirtland Budget 2012 All Fire Funds
<b>REVENUES</b>					
<b>PROPERTY TAXES (FIRE-RELATED)</b>					
Schedule A – Inside Millage	\$0	\$146,843	\$0	\$0	\$0
Schedule A – Outside Millage	\$2,630,000	\$162,196	\$0	\$0	\$813,700
<b>Subtotal</b>	<b>\$2,630,000</b>	<b>\$309,039</b>	<b>\$0</b>	<b>\$0</b>	<b>\$813,700</b>
<b>OTHER</b>					
General Fund/Income Taxes	\$0	\$2,081,703	\$510,667	\$135,431	\$585,405
Rescue Billing/Charges for Services	\$353,675	\$437,781	\$96,570	\$7,469	\$239,000
Misc.	\$186,325	\$0	\$0	\$0	\$0
<b>Subtotal</b>	<b>\$540,000</b>	<b>\$2,519,484</b>	<b>\$607,237</b>	<b>\$142,900</b>	<b>\$824,405</b>
<b>TOTAL REVENUES</b>	<b>\$3,170,000</b>	<b>\$2,828,523</b>	<b>\$607,237</b>	<b>\$142,900</b>	<b>\$1,638,105</b>
<b>EXPENDITURES</b>					
<b>PERSONAL SERVICE</b>					
<b>Subtotal</b>	<b>\$2,260,000</b>	<b>\$1,821,192</b>	<b>\$259,600</b>	<b>\$88,149</b>	<b>\$1,100,800</b>
<b>BENEFITS</b>					
<b>Subtotal</b>	<b>\$812,500</b>	<b>\$567,623</b>	<b>\$87,500</b>	<b>\$11,734</b>	<b>\$377,930</b>
<b>CONTRACT SERVICES</b>					
<b>Subtotal</b>	<b>\$108,000</b>	<b>\$0</b>	<b>\$22,600</b>	<b>\$0</b>	<b>\$51,200</b>
<b>OPERATIONS AND MAINTENANCE</b>					
<b>Subtotal</b>	<b>\$548,000</b>	<b>\$437,608</b>	<b>\$39,035</b>	<b>\$43,017</b>	<b>\$88,175</b>
<b>TOTAL OPERATIONAL EXPENDITURES (BUDGET)</b>	<b>\$3,728,500</b>	<b>\$2,826,423</b>	<b>\$408,735</b>	<b>\$142,900</b>	<b>\$1,618,105</b>
<b>POPULATION</b>					
Fire-related Property Taxes per capita	\$144	\$16	\$0	\$0	\$108
Fire-related General Fund Support per capita	\$0	\$107	\$164	\$339	\$78
Rescue Billing/Charges for Services per capita	\$19	\$22	\$31	\$19	\$32
Other Fire-related Revenues per capita	\$10	\$0	\$0	\$0	\$0
<b>Total Fire-related Revenues per capita</b>	<b>\$174</b>	<b>\$145</b>	<b>\$195</b>	<b>\$358</b>	<b>\$218</b>
Personal Service/Benefit BUDGET per capita	\$169	\$123	\$112	\$250	\$197
Contract Service BUDGET per capita	\$6	\$0	\$7	\$0	\$7
Operations/Maintenance BUDGET per capita	\$30	\$22	\$13	\$108	\$12
<b>Total Fire Operational BUDGET per capita</b>	<b>\$205</b>	<b>\$145</b>	<b>\$131</b>	<b>\$358</b>	<b>\$215</b>
<b>AREA OF COVERAGE (square miles)</b>					
Fire-related Property Taxes per square mile	\$113,362	\$46,125	\$0	\$0	\$36,245
Fire-related General Fund Support per square mile	\$0	\$310,702	\$491,026	\$214,970	\$26,076
Rescue Billing/Charges for Services per square mile	\$15,245	\$65,340	\$92,856	\$11,855	\$10,646
Other Fire-related Revenues per square mile	\$8,031	\$0	\$0	\$0	\$0
<b>Total Fire-related Revenues per square mile</b>	<b>\$136,638</b>	<b>\$422,168</b>	<b>\$583,882</b>	<b>\$226,826</b>	<b>\$72,967</b>
Personal Service/Benefit BUDGET per square mile	\$132,435	\$356,540	\$333,750	\$158,545	\$65,868
Contract Service BUDGET per square mile	\$4,655	\$0	\$21,731	\$0	\$2,281
Operations/Maintenance BUDGET per square mile	\$23,621	\$65,315	\$37,534	\$68,281	\$3,928
<b>Total Fire Operational BUDGET per square mile</b>	<b>\$160,711</b>	<b>\$421,854</b>	<b>\$393,014</b>	<b>\$226,826</b>	<b>\$72,076</b>
<b>COUNTY TAX VALUATION (TY2011/CY2012)</b>					
General – Res/Ag	\$566,194,510	\$310,619,670	\$48,039,130	\$7,736,720	\$232,786,840
General – Com/Ind	\$52,330,190	\$136,409,950	\$11,697,430	\$3,970,680	\$13,467,670
Public Utility Tangible	\$9,345,060	\$62,843,160	\$1,861,930	\$450,900	\$8,049,970
<b>Total Estimated Tax Valuation</b>	<b>\$627,869,760</b>	<b>\$609,872,780</b>	<b>\$61,598,490</b>	<b>\$12,168,300</b>	<b>\$254,304,480</b>

# LAKE COUNTY FIRE CONSOLIDATION STUDY

## OPERATIONAL EXPENDITURES ONLY SOURCE: 2012 BUDGET DOCUMENTS

	Leroy Township Budget 2012 <i>Fire District Fund</i>	Madison Fire District Budget 2012 <i>All Fire Funds</i>	Mentor Budget 2012 <i>All Fire Funds</i>	Mentor- On-The-Lake Budget 2012 <i>Fire Fund</i>	Painesville Budget 2012 <i>All Fire Funds</i>	Painesville Township Budget 2012 <i>Fire District Fund</i>
<b>REVENUES</b>						
<b>PROPERTY TAXES (FIRE-RELATED)</b>						
Schedule A – Inside Millage	\$0	\$0	\$434,253	\$0	\$78,055	\$746,432
Schedule A – Outside Millage	\$509,785	\$2,150,000	\$1,081,858	\$581,477	\$96,446	\$1,673,516
<b>Subtotal</b>	<b>\$509,785</b>	<b>\$2,150,000</b>	<b>\$1,516,111</b>	<b>\$581,477</b>	<b>\$174,501</b>	<b>\$2,419,948</b>
<b>OTHER</b>						
General Fund/Income Taxes	\$0	\$0	\$6,789,157	\$0	\$1,832,226	\$359,133
Rescue Billing/Charges for Services	\$45,322	\$900,100	\$1,500,900	\$188,204	\$625,000	\$395,516
Misc.	\$0	\$49,200	\$0	\$0	\$155,050	\$300,000
<b>Subtotal</b>	<b>\$45,322</b>	<b>\$949,300</b>	<b>\$8,290,057</b>	<b>\$188,204</b>	<b>\$2,612,276</b>	<b>\$1,054,649</b>
<b>TOTAL REVENUES</b>	<b>\$555,107</b>	<b>\$3,099,300</b>	<b>\$9,806,168</b>	<b>\$769,681</b>	<b>\$2,786,777</b>	<b>\$3,474,597</b>
<b>EXPENDITURES</b>						
<b>PERSONAL SERVICE</b>						
<b>Subtotal</b>	<b>\$305,000</b>	<b>\$1,981,500</b>	<b>\$6,476,192</b>	<b>\$511,100</b>	<b>\$1,819,060</b>	<b>\$2,246,652</b>
<b>BENEFITS</b>						
<b>Subtotal</b>	<b>\$80,000</b>	<b>\$649,000</b>	<b>\$2,375,721</b>	<b>\$150,490</b>	<b>\$593,243</b>	<b>\$835,181</b>
<b>CONTRACT SERVICES</b>						
<b>Subtotal</b>	<b>\$34,000</b>	<b>\$496,500</b>	<b>\$165,000</b>	<b>\$26,800</b>	<b>\$0</b>	<b>\$134,463</b>
<b>OPERATIONS AND MAINTENANCE</b>						
<b>Subtotal</b>	<b>\$147,963</b>	<b>\$124,700</b>	<b>\$477,155</b>	<b>\$38,522</b>	<b>\$256,464</b>	<b>\$161,204</b>
<b>TOTAL OPERATIONAL EXPENDITURES (BUDGET)</b>	<b>\$566,963</b>	<b>\$3,251,700</b>	<b>\$9,494,068</b>	<b>\$726,912</b>	<b>\$2,668,767</b>	<b>\$3,377,500</b>
<b>POPULATION</b>						
Fire-related Property Taxes per capita	\$157	\$97	\$32	\$78	\$9	\$143
Fire-related General Fund Support per capita	\$0	\$0	\$144	\$0	\$94	\$21
Rescue Billing/Charges for Services per capita	\$14	\$41	\$32	\$25	\$32	\$23
Other Fire-related Revenues per capita	\$0	\$2	\$0	\$0	\$8	\$18
<b>Total Fire-related Revenues per capita</b>	<b>\$171</b>	<b>\$140</b>	<b>\$208</b>	<b>\$103</b>	<b>\$142</b>	<b>\$206</b>
Personal Service/Benefit BUDGET per capita	\$118	\$119	\$188	\$89	\$123	\$182
Contract Service BUDGET per capita	\$10	\$22	\$3	\$4	\$0	\$8
Operations/Maintenance BUDGET per capita	\$45	\$6	\$10	\$5	\$13	\$10
<b>Total Fire Operational BUDGET per capita</b>	<b>\$174</b>	<b>\$147</b>	<b>\$201</b>	<b>\$98</b>	<b>\$136</b>	<b>\$200</b>
<b>AREA OF COVERAGE (square miles)</b>						
Fire-related Property Taxes per square mile	\$19,836	\$44,148	\$54,147	\$352,410	\$24,858	\$142,350
Fire-related General Fund Support per square mile	\$0	\$0	\$242,470	\$0	\$261,001	\$21,125
Rescue Billing/Charges for Services per square mile	\$1,763	\$18,483	\$53,604	\$114,063	\$89,031	\$23,266
Other Fire-related Revenues per square mile	\$0	\$1,010	\$0	\$0	\$22,087	\$17,647
<b>Total Fire-related Revenues per square mile</b>	<b>\$21,600</b>	<b>\$63,641</b>	<b>\$350,220</b>	<b>\$466,473</b>	<b>\$396,977</b>	<b>\$204,388</b>
Personal Service/Benefit BUDGET per square mile	\$14,981	\$54,014	\$316,140	\$400,964	\$343,633	\$181,284
Contract Service BUDGET per square mile	\$1,323	\$10,195	\$5,893	\$16,242	\$0	\$7,910
Operations/Maintenance BUDGET per square mile	\$5,757	\$2,561	\$17,041	\$23,347	\$36,533	\$9,483
<b>Total Fire Operational BUDGET per square mile</b>	<b>\$22,061</b>	<b>\$66,770</b>	<b>\$339,074</b>	<b>\$440,553</b>	<b>\$380,166</b>	<b>\$198,676</b>
<b>COUNTY TAX VALUATION (TY2011/CY2012)</b>						
General – Res/Ag	\$89,408,810	\$319,019,260	\$1,049,032,050	\$112,287,800	\$187,144,970	\$364,312,890
General – Com/Ind	\$1,342,060	\$57,820,530	\$420,203,160	\$20,360,250	\$63,955,080	\$77,189,370
Public Utility Tangible	\$6,686,940	\$8,545,520	\$38,586,070	\$5,112,370	\$1,766,390	\$11,538,820
<b>Total Estimated Tax Valuation</b>	<b>\$97,437,810</b>	<b>\$385,385,310</b>	<b>\$1,507,821,280</b>	<b>\$137,760,420</b>	<b>\$252,866,440</b>	<b>\$453,041,080</b>



**LAKE COUNTY FIRE CONSOLIDATION STUDY**

**OPERATIONAL EXPENDITURES ONLY**  
**SOURCE: 2012 BUDGET DOCUMENTS**

	Perry Joint Fire District Budget 2012	Wickliffe Budget 2012 <i>All Fire Funds</i>	Willoughby Budget 2012 <i>All Fire Funds</i>	Willoughby Hills Budget 2012 <i>All Fire Funds</i>	Willowick Budget 2012 <i>All Fire Funds</i>
<b>REVENUES</b>					
<b>PROPERTY TAXES (FIRE-RELATED)</b>					
Schedule A – Inside Millage	\$0	\$101,598	\$172,128	\$0	\$0
Schedule A – Outside Millage	\$3,695,262	\$0	\$0	\$499,496	\$642,731
Subtotal	\$3,695,262	\$101,598	\$172,128	\$499,496	\$642,731
<b>OTHER</b>					
General Fund/Income Taxes	\$0	\$2,712,415	\$4,970,416	\$1,666,629	\$665,616
Rescue Billing/Charges for Services	\$190,000	\$347,252	\$831,314	\$267,354	\$364,078
Misc.	\$144,150	\$0	\$0	\$0	\$0
Subtotal	\$334,150	\$3,059,667	\$5,801,730	\$1,933,983	\$1,029,694
<b>TOTAL REVENUES</b>	<b>\$4,029,412</b>	<b>\$3,161,265</b>	<b>\$5,973,858</b>	<b>\$2,433,479</b>	<b>\$1,672,425</b>
<b>EXPENDITURES</b>					
<b>PERSONAL SERVICE</b>					
Subtotal	\$2,206,367	\$1,964,365	\$3,964,791	\$1,456,100	\$1,276,619
<b>BENEFITS</b>					
Subtotal	\$1,174,000	\$862,900	\$1,808,179	\$419,479	\$196,700
<b>CONTRACT SERVICES</b>					
Subtotal	\$45,430	\$39,300	\$31,875	\$90,800	\$10,276
<b>OPERATIONS AND MAINTENANCE</b>					
Subtotal	\$247,700	\$93,050	\$258,900	\$137,500	\$135,940
<b>TOTAL OPERATIONAL EXPENDITURES (BUDGET)</b>	<b>\$3,673,497</b>	<b>\$2,959,615</b>	<b>\$6,063,745</b>	<b>\$2,103,879</b>	<b>\$1,619,535</b>
<b>POPULATION</b>					
	9,005	12,750	22,268	9,956	14,171
Fire-related Property Taxes per capita	\$410	\$8	\$8	\$50	\$45
Fire-related General Fund Support per capita	\$0	\$213	\$223	\$167	\$47
Rescue Billing/Charges for Services per capita	\$21	\$27	\$37	\$27	\$26
Other Fire-related Revenues per capita	\$16	\$0	\$0	\$0	0
Total Fire-related Revenues per capita	\$447	\$248	\$268	\$244	\$118
Personal Service/Benefit BUDGET per capita	\$375	\$222	\$259	\$188	\$104
Contract Service BUDGET per capita	\$5	\$3	\$1	\$9	\$1
Operations/Maintenance BUDGET per capita	\$28	\$7	\$12	\$14	\$10
Total Fire Operational BUDGET per capita	\$408	\$232	\$272	\$211	\$114
<b>AREA OF COVERAGE (square miles)</b>					
	26.00	4.66	10.34	15.07	2.54
Fire-related Property Taxes per square mile	\$142,125	\$21,802	\$16,647	\$33,145	\$253,044
Fire-related General Fund Support per square mile	\$0	\$582,063	\$480,698	\$110,592	\$262,054
Rescue Billing/Charges for Services per square mile	\$7,308	\$74,518	\$80,398	\$17,741	\$143,338
Other Fire-related Revenues per square mile	\$5,544	\$0	\$0	\$0	0
Total Fire-related Revenues per square mile	\$154,977	\$678,383	\$577,743	\$161,478	\$658,435
Personal Service/Benefit BUDGET per square mile	\$130,014	\$606,709	\$558,314	\$124,458	\$580,047
Contract Service BUDGET per square mile	\$1,747	\$8,433	\$3,083	\$6,025	\$4,046
Operations/Maintenance BUDGET per square mile	\$9,527	\$19,988	\$25,039	\$9,124	\$53,520
Total Fire Operational BUDGET per square mile	\$141,288	\$635,111	\$586,436	\$139,607	\$637,612
<b>COUNTY TAX VALUATION (TY2011/CY2012)</b>					
General – Res/Ag	\$194,696,430	\$225,582,180	\$397,817,740	\$206,367,930	\$234,805,030
General – Com/Ind	\$87,966,330	\$84,194,910	\$245,869,830	\$78,738,290	\$30,425,900
Public Utility Tangible	\$159,661,790	\$7,523,550	\$11,503,430	\$3,953,680	\$2,573,610
Total Estimated Tax Valuation	\$442,324,550	\$317,300,640	\$655,191,000	\$289,059,900	\$267,804,540

# LAKE COUNTY FIRE CONSOLIDATION STUDY

OPERATIONAL EXPENDITURES ONLY  
SOURCE: 2012 BUDGET DOCUMENTS

	TOTALS		West End		East End	
<b>REVENUES</b>						
<b>PROPERTY TAXES (FIRE-RELATED)</b>						
Schedule A – Inside Millage	\$1,679,309					
Schedule A – Outside Millage	\$14,536,467					
Subtotal	\$16,215,777		\$4,810,781		\$11,404,995	
<b>OTHER</b>						
General Fund/Income Taxes	\$22,308,798		\$21,949,665		\$359,133	
Rescue Billing/Charges for Services	\$6,789,535		\$4,904,922		\$1,884,613	
Misc.	\$834,725		\$155,050		\$679,675	
Subtotal	\$29,933,058		\$27,009,637		\$2,923,421	
TOTAL REVENUES	\$46,148,835		\$31,820,418		\$14,328,416	
<b>EXPENDITURES</b>						
<b>PERSONAL SERVICE</b>						
Subtotal	\$29,737,488	65.7%	\$20,737,969	67.7%	\$8,999,519	61.6%
<b>BENEFITS</b>						
Subtotal	\$11,002,180	24.3%	\$7,451,499	24.3%	\$3,550,681	24.3%
<b>CONTRACT SERVICES</b>						
Subtotal	\$1,256,244	2.8%	\$437,851	1.4%	\$818,393	5.6%
<b>OPERATIONS AND MAINTENANCE</b>						
Subtotal	\$3,234,932	7.2%	\$2,005,366	6.5%	\$1,229,567	8.4%
TOTAL OPERATIONAL EXPENDITURES (BUDGET)	\$45,230,844	100.0%	\$30,632,684	100.0%	\$14,598,160	100.0%
<b>POPULATION</b>						
233,231			163,808	70.23%	69,423	29.77%
Fire-related Property Taxes per capita	\$70		\$29		\$164	
Fire-related General Fund Support per capita	\$96		\$134		\$5	
Rescue Billing/Charges for Services per capita	\$29		\$30		\$27	
Other Fire-related Revenues per capita	\$4		\$1		\$10	
Total Fire-related Revenues per capita	\$198		\$194		\$206	
Personal Service/Benefit BUDGET per capita	\$175		\$172		\$181	
Contract Service BUDGET per capita	\$5		\$3		\$12	
Operations/Maintenance BUDGET per capita	\$14		\$12		\$18	
Total Fire Operational BUDGET per capita	\$194		\$187		\$210	
<b>AREA OF COVERAGE (square miles)</b>						
240.70			100.10	41.59%	140.60	58.41%
Fire-related Property Taxes per square mile	\$67,369		\$48,060		\$81,117	
Fire-related General Fund Support per square mile	\$92,683		\$219,277		\$2,554	
Rescue Billing/Charges for Services per square mile	\$28,207		\$49,000		\$13,404	
Other Fire-related Revenues per square mile	\$3,468		\$1,549		\$4,834	
Total Fire-related Revenues per square mile	\$191,728		\$317,886		\$101,909	
Personal Service/Benefit BUDGET per square mile	\$169,255		\$281,613		\$89,262	
Contract Service BUDGET per square mile	\$5,219		\$4,374		\$5,821	
Operations/Maintenance BUDGET per square mile	\$13,440		\$20,034		\$8,745	
Total Fire Operational BUDGET per square mile	\$187,914		\$306,021		\$103,828	
<b>COUNTY TAX VALUATION (TY2011/CY2012)</b>						
General – Res/Ag						
General – Com/Ind						
Public Utility Tangible						
Total Estimated Tax Valuation						

## APPENDIX D

### **FIRE & EMS OPERATIONAL CONSIDERATIONS (SOURCE, DR. JOHN GRANITO, FPE)**

Traditionally, the mission of the fire service is to save lives and protect property. When many people think of their fire department, they think of fire suppression first. However, in a number of fire departments, more than 80% of the emergencies are requests for emergency medical services. Therefore, delivering emergency medical services care fits directly into the mission of the fire department.

To help illustrate these points, a number of texts have been referenced for creditability and validation. The Insurance Services Office (ISO) has established some general station location standards. These are based on road-travel distances. The ISO Fire Suppression Rating Schedule states, "Distribution of Companies: The built-upon area of the Town should have a first due engine company within 1.5 miles and a ladder-service company within 2.5 miles."

The National Fire Protection Association (NFPA) Handbook indicates that first-due apparatus should be located within two miles of residential areas; within one and one half miles of commercial areas; and within one mile of locations where the required fire flow exceeds 5,000 gallons per minute. Variations in these distances may be specified; the distances, of course, are surrogates for travel times. Ultimately, it is the governing body to either elect to accept or reject certain standards for a variation of reasons. The ISO and NFPA; however, are nationally recognized standards, and offer "best practices" for consideration.

### **PRINCIPAL COMPONENTS OF A FIRE AND RESCUE SYSTEM**

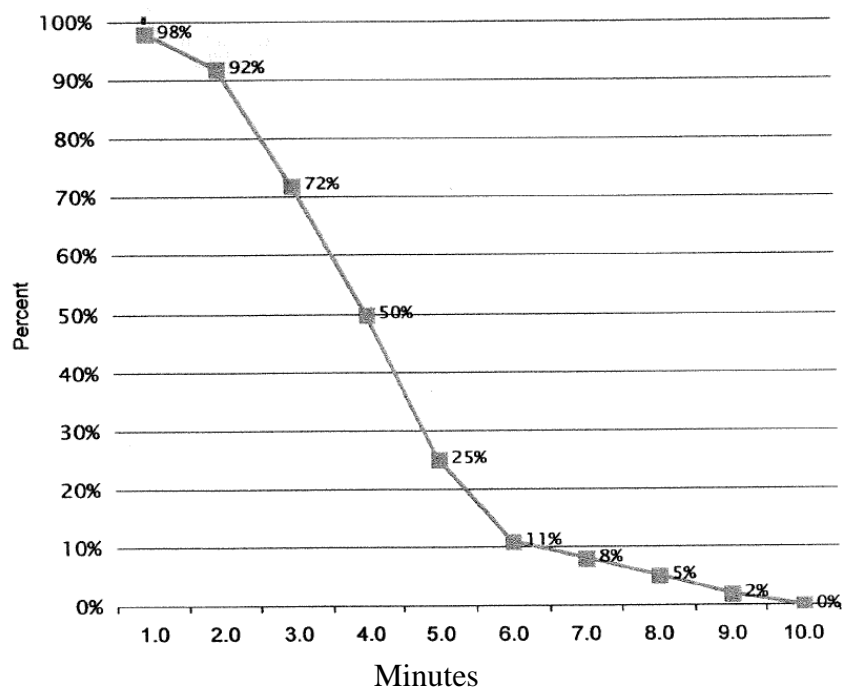
The key components of fire suppression, emergency medical service delivery, technical rescue operations (vehicle wrecks, machinery accidents, trench collapse, etc.), and large scale incident/disaster response are dependent on the number of trained responders immediately available, the time it takes for them to be summoned and respond to the scene, and the vehicles and equipment available to responders.

Legal requirements (most often related to responder safety) and the Insurance Services Office (ISO) evaluations of local fire protection for insurance premium purposes are important considerations.

Moreover, national and industry standards are typically drawn from the National Fire Protection Association, the American Medical Association, the American Heart Association, and the Federal Emergency Management Agency and provide guidance for developing a response system.

The standards for emergency medical response to life-threatening situations, for example, call for basic life support measures to begin within four minutes, followed by advanced life support measures within eight minutes. The data below is based on King County, Washington statistics, illustrates the impact of response times as they relate to recovery from heart and severe trauma incident.

## CHANCE OF RECOVERY FROM HEART OR SEVERE TRAUMA INCIDENTS (NON-BREATHING)



For planning purposes, it is important to recognize that in typical residential fires, where most fire deaths happen, "flashover" occurs within eight to ten minutes. Therefore, for emergency medical, fire, and rescue calls, trained, certified responders should reach the scene as close to four minutes as possible, with the full assignment of responders arriving within eight minutes.

## RESPONSE TIMES, RESPONSE CAPABILITIES & STATIONS

### Operating Objectives

In Lake County, Ohio, as in most fire departments, there are usually three operating objectives guiding the provision of fire and emergency medical services and ultimately, the number and location of stations.

1. To maintain, and make every effort to continually improve the current level of fire suppression, rescue, emergency medical and other capabilities of the fire department.
2. To administer and operate the department in a cost-effective manner.
3. To provide these services and cost management while ensuring the welfare and safety of fire fighter personnel.

The number and location of stations is the significant factor in determining the department's response capability and ultimately how well the above objectives are accomplished. One important measure is how rapidly a sufficient firefighting and/or emergency force can reach people and properties in danger.



Obviously, how close a station is to its service area (and in the case of multiple stations, how rapidly personnel from other stations can arrive with support) greatly determines whether the assembled force can accomplish the mission and control the emergency situation. The question of the size of the force is normally more related to fire than EMS; however, because of the real possibility of multiple and simultaneous emergencies, adequate numbers of personnel must be readily available to rapidly respond to each type of emergency.

If stations have limited staff and the firefighter force is too dispersed, there is difficulty assembling a team rapidly. With limited staffing, meeting the OSHA "two in, two out guideline" may be a significant concern. This guideline requires that, except in extreme life-threatening situations (to the occupants), four adequately equipped firefighters must be at the scene of a structure fire before any two may enter.

## **RESPONSE TIME AND RESPONSE CAPABILITY OBJECTIVES**

A primary consideration in station location decisions is what initial and subsequent response level capability the Fire Department should subscribe to. As a policy matter, response capability objectives should be established by the policy-makers and the department, with due consideration of financial resources. While keeping taxes from unduly rising is an important objective, response capabilities and firefighter safety must receive every consideration in the equation.

Response capabilities should consider both rapid response and, in the case of fire emergencies, a sufficient number of firefighters to attack the fire. Response time policy must also accommodate variations in fire danger, the ability of the department to locate resources (stations, staffing and apparatus), and travel times across different parts of the service area. Lastly, and very importantly, the responses must consider subsequent responses after the initial response: the possibility of simultaneous emergency events, fire, rescue, haz-mat and EMS incidents, occurring during or after the initial incident.

In developing response capability objectives, there are many considerations:

1. Containment. In structure fire instances, there are several important factors to weigh. First is the behavior of fire within a confined space. The risks associated with this can vary across the county. In higher density buildings, and in the closely developed built-up areas, it is imperative to consistently contain a fire within the compartment of origin (that area separated from the remainder of the structure by construction).

This means that the fire department must interrupt the growth of fire before a condition called "flashover" occurs. At flashover, there is a rapid transition in fire behavior from localized burning of fuel, to involvement of all the combustibles in the enclosure. At that time, the fire typically expands in six different directions: vertically through the ceiling, horizontally through the four walls, and even through openings in the floor.

By then, all barriers to fire growth beyond the original compartment are under attack by extremely hot flame, smoke, and gasses. These elements expand at approximately 50 times their volume per minute. At flashover, the probability of death or serious injury to occupants of the structure is significant. Obviously, life safety within the structure is a basic concern and, when there are nearby properties involved, the control of flashover becomes even more paramount as additional lives and property are jeopardized.

Comprehensive testing by the United States Institute of Standards and Technology has generally established that a fire within a typically furnished room will evolve into flashover within four to ten minutes of the event of open flame. At that time, temperatures at ceiling level will reach 1,500 degrees. United States fire department planning generally assumes approximately an eight-minute period before flashover. Under these circumstances, and where lives and properties are in danger, in order to accomplish timely interruption of fire growth, contain the fire within the compartment of origin, and locate and remove threatened persons, rapid and effective response is essential.

Fire companies must receive notification of the fire, don appropriate safety gear, mount the apparatus, travel to the scene of the fire, accomplish sufficient firefighting tasks to inhibit fire growth, and rescue occupants within approximately eight minutes of the event of flame. The tasks to be accomplished at the scene by the initial arriving units include search, rescue, ventilation, ladder placement, hose line deployment and other actions, all requiring immediate and simultaneous execution.

2. Local Characteristics. When designing response time and response capability objectives, it is important to consider fire risks, how they vary by neighborhood, and the level of service needed. Risks are greatest in wood frame and non-resistant residential dwelling units, which are normally without automatic detection and reporting systems or suppression systems. In newer construction (particularly commercial, industrial, and institutional structures) where buildings may be required to have automatic detection and suppression systems, the fire risk can be less.

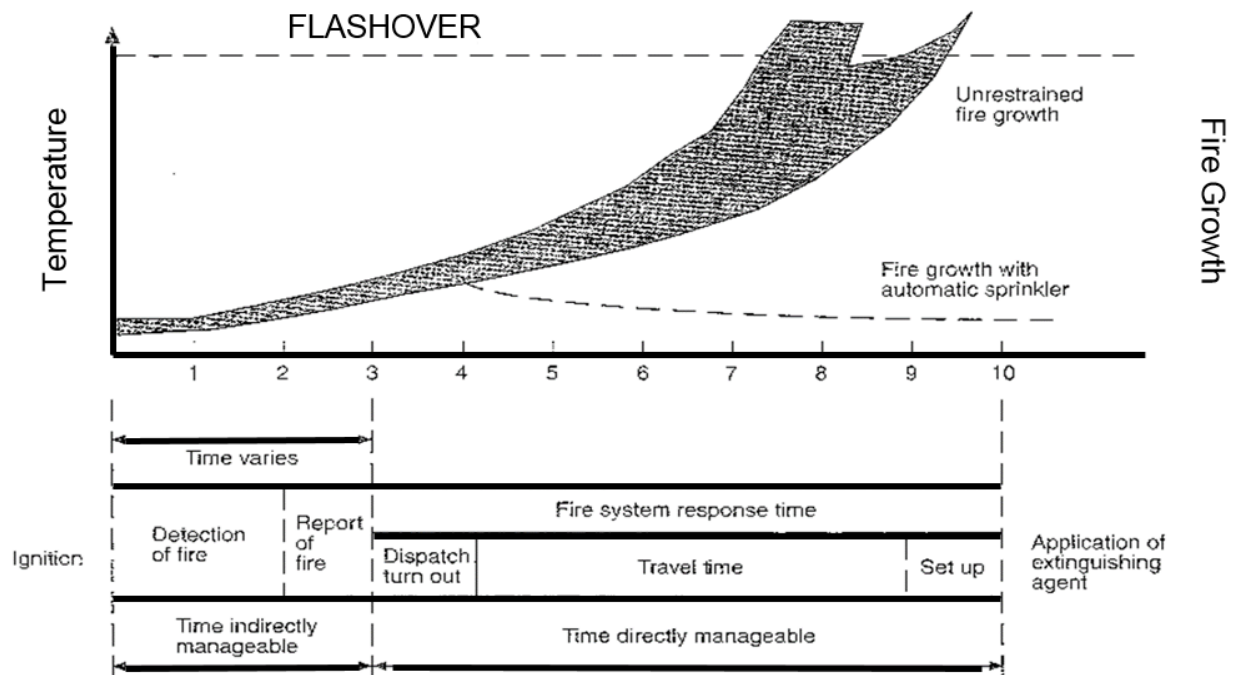
The latter usually have suppression systems, which reduce the unmeasured time between the start of a fire and when the fire is detected and reported, and automatically retard fire development.

All things considered, in bringing firefighters to the point of "fire interruption" the following processes are considered reasonable allowances, but necessarily general ones, with some deviation in particular instances:

Notification of the fire companies	1-2 minutes
Turnout of firefighters {donning safety gear, etc.) and dispatch	1 minute
Size-up and set-up at scene	1-2 minutes
Total	3-5 minutes

Assuming it will take an average of four minutes for the above processes, including a caller to discover and notify the fire department of an emergency, for turn-out of firefighters, for dispatch of the fire company, and for size-up and set-up at the scene, in most structure fires, the first-due company has very limited time to travel to the incident location and accomplish interruption of fire growth, perhaps no more than four minutes. The locations of stations, thus, should ensure that travel times of four minutes can be accomplished in most of the response area surrounding the station so that the initial response can arrive in time to prevent flashover.

This chart represents the temperature of a fire over time, in relationship to survivability.



3. **Distribution of Capacity.** The basic principle for allocation of suppression forces is to distribute units throughout the service area, to allow approximately equal travel distances and response times to all locations. However, factors other than distance will influence response times and distribution of suppression units. For instance, weather conditions, the configuration of the roadway network, or traffic patterns may delay response, or there may be a higher probability of units being deployed because of another fire or incident.

Taking into account these factors, therefore, each protection area must set its own realistic goal, such as reaching 80 or 90 percent of the incidents within an identified number of minutes.

4. **EMS Response Considerations.** The benchmark for fire interruption is also important for emergency medical response purposes. Survivability for a non-breathing person is a function of application of CPR, defibrillation, and advanced life support. Models exist to predict survivability.

A commonly referred to model is the Eisenberg Model, which estimates the probability of survival based on a system's ability to deliver the critical links in a timely manner.

The functional equation is:

Survival rate = 67% minus 2.3% per minute without CPR,  
minus 1.1% without necessary defibrillation,  
minus 2.1% per minute without necessary Advanced Cardiac Life Support

This equation suggests that one-third of all non-breathing and/or cardiac arrest patients may die immediately, and that the remaining individuals' probability of survival decreases by up to 5.5 percent for each subsequent minute; however, the decrease can be slowed by the application of the various procedures (CPR, defibrillation, ACLS).

5.     AHA. Standard. Based on this equation, and their own observations and experiences, the American Heart Association recommends a maximum response time of four minutes for initiation of Basic Life Support (BLS) and eight minutes for initiation of ALS.
6.     Personnel and Apparatus Deployment Factors. For a working fire, the minimum apparatus should be two engines, one ladder and ten, preferably 12, firefighters, including an incident commander. The 12-person requirement for a residential structure working fire is specified in the NFPA handbook and is also based on studies in Louisville, Phoenix and other areas, and is a commonly accepted, industry-wide standard. Twelve persons are required at the fire scene in order to provide sufficient personnel to operate pumpers and ladders. It is necessary to have three persons to operate the two pumpers and one ladder, four to stretch hose-line, two for rescue operations, two for a ladder and ventilation team, and an incident commander.

It is also important to remember the so-called "two in, two out" OSHA guideline, which states that, except in extreme life-threatening situations to the occupants, four firefighters will be required at the scene of a structure fire before any two may enter.

Below are listed the four emerging standards, or benchmarks, which affect crew size desired for a fire call:

1.     OSHA requirements for a minimum of four equipped personnel to be present before entry in a structure fire incident
2.     OSHA requirements for a rapid entry team to be present for safety reasons at working structure fires
3.     OSHA and NFPA requirements for a qualified incident commander and a qualified safety officer to be present at working incidents
4.     Industry standards to have a minimum of 12 firefighters and an incident commander present for a low-hazard structure fire, plus at least two pumpers and a ladder truck, or similar vehicle

## APPENDIX E

Volunteer Fire Insurance Service (VFSI) published a report entitled *Fire Department Consolidation Why and How to Do It ...Right*.

*In today's economic climate, with budgets being crunched at all levels of government, resources are being stretched for many reasons, including crime and drug problems, health and welfare needs, the environment and maintaining infrastructure. All of these concerns compete with fire protection for limited funds. In some communities, even private organizations that once were funded outside the tax base are now seeking public support.*

*In fire departments, demands for services are increasing at a steady rate, particularly for emergency medical services (which most fire departments provide today). They will continue to do so into the next century as our population continues to age. Meanwhile, taxpayers do not want to pay more, meaning something has to give.*

*Many fire departments are turning to a variety of joint ventures to provide the level of service their communities need while conserving scarce resources. They are applying a wide variety of approaches, ranging from the informal sharing of individual personnel or equipment to the formal consolidation of departments across jurisdictional lines. The continuum of such cooperation might include:*

- *Informal mixing and matching in which one jurisdiction borrows a technical specialist from another to help with a short-term project or problem.*
- *Combining to share such specialized services or equipment, through a contract, as hazardous materials response vehicles, special heavy-rescue vehicles or aerial ladder trucks, apparatus maintenance or information services.*
- *Creating a process for hiring one another's specialized staff on a consulting basis for special projects or short-term relief, for example, one city, without a fire inspector for three months, arranges with a neighboring community to share the time of its inspection staff during that period.*

*When shared needs exceed the limits of a single functional area and extend to the entire range of fire protection operations, such tools as mutual aid agreements (on-request or automatic) often are instituted. Increasingly, adjoining fire agencies are moving further, committing to legal consolidation of their organizations to form a new ones. Consolidation itself offers a full range of alternatives.*

- *In a functional consolidation, separate fire departments are retained, but one or more duties normally performed by one department are assigned to members of another department, or duties normally performed separately by all departments are assigned to a combined new organization under the control of all participating organizations; an example of this is a joint training center.*

- *In a partial consolidation, separate fire departments are retained, and a special agreement is formulated to handle specific challenges; an example is shared staffing of a fire station located where it can readily serve two or more jurisdictions.*
- *In an operational consolidation, sometimes called a merger, separate fire departments are combined in total into one unified department through a legal process.*

*Other types of consolidation exist as well, including combinations of police and fire departments into public safety departments, or comprehensive mergers of entire governments (a city and county combining all functions and services across the board, for example). In many cases, smaller departments simply contract for services with the largest city in the area, as is done in Los Angeles.*

*Mutual aid agreements provide for reciprocal assistance for emergency management, fire, rescue, emergency medical, hazardous material and other disaster response services. Such an agreement might specify joint response to all alarms in a given geographic area or automatic response by the facility closest to the incident, regardless of jurisdiction.*

*Whatever the approach taken to interjurisdictional cooperation, the best interest of the public must be the driving motivator.*

### **WHY CONSOLIDATE?**

*Fire officials find themselves considering a consolidation or merger for different reasons. In some instances, the action is directed by elected officials for whom consolidation is a hot topic in the 1990's. In others, fire service managers themselves come upon consolidation as they seek better ways to provide the services their citizens need and deserve. In many instances, state constitutions and laws even encourage local jurisdictions to undertake such efforts to make the most effective and efficient use of their resources.*

*Consolidation can be a viable option, which should be looked upon as a beneficial alternative to enable improved use of scarce resources, flexibility of staff, equipment and dollars, stronger internal programs, and increased opportunities to expand services and/or specialize. It works to overcome political boundary issues, ensuring that the closest unit responds in an emergency, and creating more rational protection service areas and faster response times.*

*Consolidation can provide for an expanded tax base and reduce redundancy in apparatus, personnel and equipment, and the planning process itself can identify areas for savings not foreseen at the outset. It eliminates turf and tax conflicts and, by providing more efficient application of available resources, can enable the closure of stations or other duplicated facilities and services.*

*Consolidation can lower apparatus replacement requirements, reduce the number of reserve pieces required and eliminate duplication of specialty apparatus. Additional cost reductions can be realized through volume purchasing, as well as through combined equipment planning and maintenance.*

*In Contra Costa County, California, consolidation was said to have resulted in a measurable, almost immediate reduction in the tax burden, including a reported 50% decrease in the training budget. With local growth also contributing to the reduction, the tax rate dropped from \$.872 to \$.725 in the first five years, and a 10% capital improvement program was instituted. Tualatin Valley, Oregon, saw a reduction in its tax rate from more than \$3.00 (per \$1000) to \$1.64 in just four years.*

*Consolidation can result in a new organization that places more resources on the fireground, a vital interest in fire protection environment. Improvements in the communities' ratings from the Insurance Services Office can result from consolidation as well.*

*The elements of a plan that might bring such benefits include, quicker emergency response times, enhanced training schedules, improved joint communications, improved fireground communications, additional reserve apparatus and enhanced water supply (urban and rural).*

*Consolidation also makes fire protection master planning easier during periods of tremendous regional growth. Planning for placement of future facilities, hiring and training is supported by the process and eased by the increased resources available. The analysis and revised perspective that grow out of the consolidation planning process can lead to modernized systems. Jurisdictions can become better able to deal with problems that span political boundaries, for example, a chemical recycling operation located in the county. In addition, a common set of fire codes and amendments can make enforcement easier to understand and accomplish both for the department and for developers.*

*Internally, consolidation can offer more appealing career enhancement possibilities. Although positions at the top are reduced, the organization as a whole is larger, creating more retirements, other turnover, and better opportunities for advancement for bright young officers. In addition, labor contracts can be standardized, and areas or periods of volunteer shortages can be compensated for.*

*Consolidation is not always the same. It lends itself to individual customized approaches to meet particular local needs. For example, when city and county fire chiefs in Seminole County, Florida, began looking into consolidation in an effort to help their many separate departments serve their citizens more efficiently, they decided to institute a highly individualized approach. Chief Tom Siegfried of Altamonte Springs explains that something beyond a functional consolidation (combining communication or training functions) was called for, but the kind of consolidation most often considered, in which entire departments combine in total, had little appeal.*

*"There seemed to be a lot of pain that went along with major consolidations," Siegfried recalls, "and, in some cases, it even worked out that the price tag went up and the level of service went down." In 1985, after a period of intense study and discussion, the fire chiefs of Seminole County entered into a joint venture that is in some ways a partial consolidation and in other ways similar to a broad mutual aid agreement.*



*However, it also is more, softening jurisdictional boundaries by instituting automatic first response by the closest company regardless of those boundaries using a countywide dispatch system. An inter-local agreement forms the foundation for the cooperation.*

*Response zones were established that ensure response by the nearest piece of equipment. Fire stations have been located strategically, with one city and one county facility moved to provide better coverage. Location of specialized apparatus and equipment, such as aerial trucks and rescue rigs, is thoughtfully planned. "We've become much more efficient, protecting more people with fewer people," Siegfried reports.*

*For example, for a multiple company response in the city of Altamonte Springs, the assigned response might consist of an engine from Altamonte Springs, another from the county, an aerial truck from another city and a rescue truck from somewhere else. "That means we don't have to have all of those pieces of equipment available in every jurisdiction," he adds.<sup>4</sup>*

## APPENDIX F

### Hernando County, Florida Year study was conducted: 2007

Brooksville, Hernando Beach, Hernando Co., High Point, Spring Hill, FL								
Jurisdiction	Brooksville FD	Hernando Beach Volunteer FD	Hernando Co. Fire Rescue	High Point, Volunteer FD	Spring Hill Fire Rescue	TCVFD	Total for this area	rate per 1,000
Area (sq/mi)	12.3	18.4	420.3	1	49.6	4.4	506	
Population	7,264	2,648	49,454	2,080	90,837	429	152,712	
Sworn Personnel FTE	65.666667	16.33333333	107	16.66666667	12.6666667	4	222.33	1.46
Administrative person	2	2	36	6	2	0.66666667	48.66666667	
Captain	3	0.33333333				0.33333333		
Lieutenant	3	1.66666667	0			0.33333333		
Firefighter	9	12.33333333	71	10.66666667	10.6666667	2.66666667		
Civilian personnel				(7 not incl.)				
<b>Salaries</b>								
Chiefs		HBVFD uses volunteers to carry out functions		HBVFD uses volunteers to carry out functions		HBVFD uses volunteers to carry out functions		
Deputy Chiefs								
Assistant Chiefs								
Battalion Chief								
Captain	\$ 50,735		\$ 50,086		\$ 51,970			
Lieutenant	\$ 43,673							
Firefighter	\$ 32,784		\$ 39,000		\$ 42,797			
<b>Apparatus (rate per 1,000)</b>								
Engines	2	2	11	2	5	2	24	
Ladders	1	0			1		2	
Quints								
Water Tankers	2		2	1		1	6	
Support vehicles	4	3	7		2		16	
EMS vehicles			7	1	6	1	15	
Staff vehicles	1		1				2	
<b>Number of Fire Stations</b>	1	1	9	1	5	1	18	
<b>ISO rating</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

#### Purpose of the study:

To provide an evaluation of the agencies, their management, assets, operations, and service delivery.

- Recommend individual, short-term improvement.

- Identify the anticipated changes in the population, risk factors, and service demand that will be faced by Hernando County as anticipated growth and development take place in the future.
- Provide feasible strategies for changes and improvement to the deployment of facilities, apparatus, and staffing that would be necessary to maintain or achieve the target levels of performance identified for the urban, suburban, and rural zones of the county.
- Evaluate potential organizational, governance, or operational changes involving various cooperative efforts among the six fire departments that were identified as alternatives in an effort to reduce costs or increase efficiency and effectiveness.

### End results of the study:

As a result of the individual agency evaluations, 85 individual or collective recommendations for short or mid-term improvements were provided. These recommendations range from relatively minor operational issues to more significant governance or policy considerations. The recommendations are compiled in an appendix near the end of the report.

ONE DEPARTMENT MODEL									
	CURRENT			NFPA LOW	p/day	NFPA MEDIAN	p/day	NFPA HIGH	p/day
Population	152,712			152,712		152,712		152,712	
# of FTEs	222.33	74 p/day		27	9	205	68	496	165
FTEs per 1000	1.46			0.18		1.34		3.25	
# Stations	18								
Staffing Option 1	112	x 3 shifts =	336	Staffing Option 1 4 person Engine, Ladder --- 2 person EMS					
Staffing Option 2	91	x 3 shifts =	273	Staffing Option 2 3 Person Engine, Ladder --- 2 person EMS					
Staffing Option 3	233	x 3 shifts =	699	Staffing Option 3 3 Person Engine, 2 Person Ladder, 2 person EMS					
Staffed Apparatus	4.4.2	Need		3.3.2	Need		3.2.2	Need	
Engine	19	76		19	57		19	57	
Ladder	2	8		2	6		2	4	
EMS	15	30		15	30		15	30	
TOTAL		114		TOTAL	93		TOTAL	91	
To operate a 4 person Engine & Ladder and a 2 person EMS you ne				114	FTEs on shift		CURRENT		
To operate a 3 person Engine & Ladder and 2 person EMS you need				93	FTEs on shift		222.33	\$75,000.00	
To operate a 3 person Engine, 2 person Ladder and 2 person EMS you				91	FTEs on shift		\$16,675,000		
FINANCIAL									
Staffing Option 1	Engines	76	\$75,000.00						
	Ladders	8	\$75,000.00				TOTAL		
	EMS	30	\$75,000.00				\$8,550,000		
Staffing Option 2	Engines	57	\$75,000.00						
	Ladders	6	\$75,000.00				TOTAL		
	EMS	30	\$75,000.00				\$6,975,000		
Staffing Option 3	Engines	57	\$75,000.00						
	Ladders	4	\$75,000.00				TOTAL		
	EMS	30	\$75,000.00				\$6,825,000		

# Bonita Springs, Estero, San Carlos Park, Fire Protection & Rescue Service Districts, Florida

Year study was conducted: 2009

Bonita Springs, Estero, San Carlos Park, FL Fire Protection and Rescue Service Districts					
Jurisdiction	Bonita Springs	Estero	San Carlos Park	Total for this area	rate per 1,000
Area (sq/mi)	38.6	20.02	4.72	63.3	
Population	43,914	22,612	16,824	83,350	
Response districts					
Sworn Personnel	98	59	59	216	2.59
Chiefs	1	1	1	3	
Assistant Chiefs	1	1	1	3	
Deputy Chiefs	3	0	1	4	
Division chief	2	3	2	7	
Battalion Chief/Captain	3	3	3	9	
Lieutenant	26	12	9	47	
Firefighter	54	36	39	129	
Fire Inspector	7	3	3	13	
Administrative	1	0	0	1	
Salaries					
Chiefs					
Assit/Deputy Chiefs					
Division chief					
Battalion Chief/Captain	\$95,593.00		\$80,686.00		
Lieutenant	\$82,813.00	\$83,636.00	\$73,255.00		
Firefighter	\$72,311.00	\$64,799.00	\$61,625.00		
Fire Inspector	\$67,267.00	\$72,662.00	\$66,300.00		
Administrative					
Apparatus				39	
Engines				10	
Ladders				2	
Quints				1	
Water Tankers					
Support vehicles				6	
EMS vehicles				6	
Staff vehicles				2	
Number of Fire Stations (rate per 1,000)	5	4	3	12	
ISO rating	4(9)	3(8b)	3(9)		

### Purpose of the study:

To explore the concept of consolidation or increased shared services

### End results of the study:

Our report presents the Districts with two major options, and recommended that the three Districts consolidated into a new District.

ONE DEPARTMENT MODEL									
	CURRENT			NFPA LOW	p/day	NFPA MEDIAN	p/day	NFPA HIGH	p/day
Population	83,350			83,350		83,350		83,350	
# of FTEs	216	72 p/day		3	1	107	36	288	96
FTEs per 1000	2.59			0.03		1.28		3.46	
# Stations	12								
Staffing Option 1	60	x 3 shifts =	180	Staffing Option 1 4 person Engine, Ladder --- 2 person EMS					
Staffing Option 2	48	x 3 shifts =	144	Staffing Option 2 3 Person Engine, Ladder --- 2 person EMS					
Staffing Option 3	46	x 3 shifts =	138	Staffing Option 3 3 Person Engine, 2 Person Ladder, 2 person EMS					
Staffed Apparatus	4.4.2	Need		3.3.2	Need		3.2.2	Need	
Engine	2.5	10		3.33	10		3	10	
Ladder	0.5	2		0.67	2		1	1	
EMS	3	6		3.00	6		3	6	
TOTAL	18			TOTAL	18		TOTAL	17	
To operate a 4 person Engine & Ladder and a 2 person EMS you need				18	FTEs on shift		CURRENT		
To operate a 3 person Engine & Ladder and 2 person EMS you need				18	FTEs on shift		216	\$75,000.00	
To operate a 3 person Engine, 2 person Ladder and 2 person EMS you need				17	FTEs on shift		\$16,200,000		
FINANCIAL									
Staffing Option 1	Engines	10	\$75,000.00						
	Ladders	2	\$75,000.00			TOTAL			
	EMS	6	\$75,000.00			\$1,350,000			
Staffing Option 2	Engines	10	\$75,000.00						
	Ladders	2	\$75,000.00			TOTAL			
	EMS	6	\$75,000.00			\$1,350,000			
Staffing Option 3	Engines	10	\$75,000.00						
	Ladders	1.33333333	\$75,000.00			TOTAL			
	EMS	6	\$75,000.00			\$1,300,000			

**Shaker Heights, University Heights, Cuyahoga County, Ohio**  
**Year study was conducted: 2012**

## Shaker Heights, University Heights, OH

Jurisdiction	Shaker Heights	rate per 1,000	University Heights	rate per 1,000	Total for this area	rate per 1,000
Area (sq/mi)	6.3		1.8		8.1	
Population	28448		13539		41987	
Response districts						
Sworn Personnel					116.5	2.77
Chiefs	1		1		2.0	
Assistant Chiefs	1		0		1.0	
Deputy Chiefs					0.0	
Division chief					0.0	
Battalion Chief/Captain	4		4		8.0	
Lieutenant	12		2		14.0	
Firefighter	35		55		90.0	
Fire Inspector					0.0	
Administrative	1.5				1.5	
Salaries	2011 salaries					
Chiefs	\$110,850.00		\$95,044.00		\$205,894.00	
Assit/Deputy Chief	\$97,980.00				\$97,980.00	
Division chief						
Battalion Chief	\$86,374.00		\$86,404.00			
Lieutenant	\$77,118.00		\$77,841.00			
Firefighter	\$68,855.00		\$77,316.00			
Fire Inspector	\$70,922.00				\$70,922.00	
Administrative	\$46,710.00				\$46,710.00	
Apparatus						
Engines	8		4		12	
Ladders	2		2		4	
Quints						
Water Tankers						
Support vehicle	1				1	
EMS vehicles	6		3		9	
Staff vehicles						
Number of Fire Stations (rate per 1,000)	2		1		3	
ISO rating	3		4			

### Purpose of the study:

To conduct a Cooperative Services Feasibility Study of the two municipalities' fire departments.

### End results of the study:

The cities should work closely with one another to form a joint vision for consolidated service and determine the most effective model of governance; several of which are discussed in the report, including a joint fire district, intergovernmental agreement, and the creation of a council of governments. To end the report, a list of critical issues is discussed along with guidance for policymakers to utilize as they move forward as well as a partial listing of the potential benefits of a cooperative effort between the two cities.

ONE DEPARTMENT MODEL									
	CURRENT			NFPA LOW	p/day	NFPA MEDIAN	p/day	NFPA HIGH	p/day
Population	41,987			41,987		41,987		41,987	
# of FTEs	116.5	39	p/day	0	0	50	17	277	92
FTEs per 1000	2.77			0		1.2		6.6	
# Stations	3								
Staffing Option 1	44	x 3 shifts =	132	Staffing Option 1 4 person Engine, Ladder --- 2 person EMS Staffing Option 2 3 Person Engine, Ladder --- 2 person EMS Staffing Option 3 3 Person Engine, 2 Person Ladder, 2 person EMS					
Staffing Option 2	45	x 3 shifts =	135						
Staffing Option 3	50	x 3 shifts =	150						
Staffed Apparatus	4.4.2	Need		3.3.2	Need		3.2.2	Need	
Engine	1.5	6		2.67	8		2.67	8	
Ladder	0.5	2		1.00	3		1.00	2	
EMS	3	6		3.00	6		3.00	6	
TOTAL		14		TOTAL	17		TOTAL	16	
To operate a 4 person Engine & Ladder and a 2 person EMS you need					14	FTEs on shift	CURRENT		
To operate a 3 person Engine & Ladder and 2 person EMS you need					17	FTEs on shift	116.5	\$75,000.00	
To operate a 3 person Engine, 2 person Ladder and 2 person EMS you need					16	FTEs on shift	\$8,737,500		
FINANCIAL									
Staffing Option 1	Engines	6	\$75,000.00						
	Ladders	2	\$75,000.00			TOTAL			
	EMS	6	\$75,000.00			\$1,050,000			
Staffing Option 2	Engines	8	\$75,000.00						
	Ladders	3	\$75,000.00			TOTAL			
	EMS	6	\$75,000.00			\$1,275,000			
Staffing Option 3	Engines	8	\$75,000.00						
	Ladders	2	\$75,000.00			TOTAL			
	EMS	6	\$75,000.00			\$1,200,000			



**The Cities of Ramsey, Nowthen, St. Francis, Oak Grove, Bethel, Minnesota  
Year study was conducted: 2013**

<b>Ramsey, Nowthen, St. Francis, Oak Grove, Bethel, MN</b>							
<b>Jurisdiction</b>	<b>Bethel</b>	<b>Nowthen</b>	<b>Oak Grove</b>	<b>Ramsey</b>	<b>St. Francis</b>	<b>Total for this area</b>	<b>rate per 1,000</b>
<b>Area (sq/mi)</b>	0.97	35.1	35.1	29.7	23.7	124.57	
<b>Population</b>	500	4,500	8,031	23500	7000	43,531	
<b>Response districts</b>							
<b>Total budget</b>							
<b>Sworn Personnel</b>	<b>4</b>	<b>0</b>	<b>10.33</b>	<b>19</b>	<b>7.33</b>	<b>40.67</b>	<b>0.93</b>
Chiefs	0.33		0.33	1.00		1.67	
Assistant Chiefs	0.33		0.33	0.67	0.33	1.67	
Deputy Chiefs			0.00			0.00	
Division chief							
Captain	0.33		0.67	1	0.33	2.33	
Lieutenant	0.67		1.67	1	1.33	4.67	
Firefighter	2.33		7.33	14.33	5.00	29.00	
Fire Inspector				1	0.33	1.33	
Administrative			0.33	0.5		0.83	
<b>Salaries</b>							
not listed							
<b>Apparatus (rate per 1,000)</b>							
Engines	2	1	2	2	2	9	
Ladders				1		1	
Quints							
Water Tankers		1	2	2	2	7	
Support vehicle	3	1	3	4	3	14	
EMS vehicles							
Staff vehicles							
<b>Number of Fire Stations (rate per 1,000)</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>7</b>	
<b>ISO rating</b>							

**Purpose of the study:**

To evaluate the feasibility of shared and cooperative services between the city fire departments.

**End results of the study:**

A Joint Powers Authority (JPA) appears to be the preferred method of joining the study agencies under a single model of governance. Under this model, each municipality would retain its current level of control and a methodology for funding the joint agency would be determined as the details are nailed down.

ONE DEPARTMENT MODEL									
	CURRENT			NFPA LOW	p/day	NFPA MEDIAN	p/day	NFPA HIGH	p/day
Population	43,531			43,531		43,531		43,531	
# of FTEs	40.67	14	p/day	0	0	52	17	287	96
FTEs per 1000	0.93			0		1.2		6.6	
# Stations	7								
Staffing Option 1	52	x 3 shifts =	156	Staffing Option 1 4 person Engine, Ladder --- 2 person EMS					
Staffing Option 2	44	x 3 shifts =	132	Staffing Option 2 3 Person Engine, Ladder --- 2 person EMS					
Staffing Option 3	52	x 3 shifts =	156	Staffing Option 3 3 Person Engine, 2 Person Ladder, 2 person EMS					
Staffed Apparatus	4.4.2	Need		3.3.2	Need		3.2.2	Need	
Engine	1.75	7		2.33	7		2.33	7	
Ladder	0.25	1		0.33	1		0.33	1	
EMS	5	10		5.00	10		5.00	10	
	TOTAL	18		TOTAL	18		TOTAL	18	
To operate a 4 person Engine & Ladder and a 2 person EMS you need				18	FTEs on shift				
To operate a 3 person Engine & Ladder and 2 person EMS you need				18	FTEs on shift				
To operate a 3 person Engine, 2 person Ladder and 2 person EMS you need				18	FTEs on shift				
FINANCIAL								CURRENT	
Staffing Option 1	Engines	7	\$75,000.00					40.66666667	\$75,000.00
	Ladders	1	\$75,000.00			TOTAL		\$3,050,000	
	EMS	10	\$75,000.00			\$1,350,000			
Staffing Option 2	Engines	7	\$75,000.00						
	Ladders	1	\$75,000.00			TOTAL			
	EMS	10	\$75,000.00			\$1,350,000			
Staffing Option 3	Engines	7	\$75,000.00						
	Ladders	0.66666667	\$75,000.00			TOTAL			
	EMS	10	\$75,000.00			\$1,325,000			

**The Cities of Carlton, Wrenshall, Esko, Minnesota**  
**Year study was conducted: 2011**

	<b>Carlton, Wrenshall, Esko, MN</b>				
<b>Jurisdiction</b>	Carlton	Esko	Wrenshall	<b>Total for this area</b>	<b>rate per 1,000</b>
<b>Area (sq/mi)</b>	163.4	42.1	116	<b>321.5</b>	
<b>Population</b>	9,700	5,000	1,650	<b>16,350</b>	
<b>Response districts</b>					
<b>Total budget</b>					
<b>Sworn Personnel</b>				<b>37.33</b>	<b>2.28</b>
Chiefs	1	1	1	<b>3.00</b>	
Assistant Chiefs	2	2	2	<b>6.00</b>	
Deputy Chiefs				<b>0.00</b>	
Division chief				<b>0.00</b>	
Battalion Chief/Captain	1	1	1.33	<b>3.33</b>	
Lieutenant				<b>0.00</b>	
Firefighter	7.33333333	7.66666667	6	<b>21.00</b>	
rescue operations level	2			<b>2.00</b>	
Fire Equip. Operator	1.66666667			<b>1.67</b>	
Fire investigator	0.33			<b>0.33</b>	
<b>Salaries</b>					
non listed					
<b>Apparatus (rate per 1,000)</b>					
Engines	2	2	2	<b>6</b>	
Ladders					
Quints					
Water Tankers			1	<b>1</b>	
Support vehicles	3	4	2	<b>9</b>	
EMS vehicles	2			<b>2</b>	
Staff vehicles	1			<b>1</b>	
<b>Number of Fire Stations (rate per 1,000)</b>					
<b>ISO rating</b>	6 (9)	5	7		

**Purpose of the study:**

To conduct a Feasibility Study for Shared or Cooperative Fire and Emergency Services between Carlton Fire Department, Esko Fire Department, and Wrenshall Fire Department.

## End results of the study:

Each of the following options for shared services is discussed in detail:

1. Shared Specialty Teams and Equipment
2. Purchase Uniform Emergency Apparatus
3. Develop Uniform Pre-Incident Plans
4. Develop Standard Operating Guidelines
5. Create a Unified Occupational Medicine Program
6. Develop and Adopt Common Training Standards
7. Develop a Regional Annual Training Plan
8. Implement a Computerized Training Records Management System

ONE DEPARTMENT MODEL									
	CURRENT			NFPA LOW	p/day	NFPA MEDIAN	p/day	NFPA HIGH	p/day
Population	16,350			16,350		16,350		16,350	
# of FTEs	37.33	12 p/day		0	0	16	5	126	42
FTEs per 1000	2.28			0		1		7.69	
# Stations	4								
Staffing Option 1	16	x 3 shifts =	48	Staffing Option 1 4 person Engine, Ladder --- 2 person EMS					
Staffing Option 2	13	x 3 shifts =	39	Staffing Option 2 3 Person Engine, Ladder --- 2 person EMS					
Staffing Option 3	34	x 3 shifts =	102	Staffing Option 3 3 Person Engine, 2 Person Ladder, 2 person EMS					
Staffed Apparatus	4.4.2	Need		3.3.2	Need		3.2.2	Need	
Engine	0.75	3		1.00	3		1.00	3	
Ladder	0	0		0.00	0		0.00	0	
EMS	1	2		1.00	2		1.00	2	
TOTAL		5		TOTAL	5		TOTAL	5	
To operate a 4 person Engine & Ladder and a 2 person EMS you need				5	FTEs on shift				
To operate a 3 person Engine & Ladder and 2 person EMS you need				5	FTEs on shift				
To operate a 3 person Engine, 2 person Ladder and 2 person EMS you ne				5	FTEs on shift				
FINANCIAL								CURRENT	
Staffing Option 1	Engines	3	\$75,000.00					37.33333333	\$75,000.00
	Ladders	0	\$75,000.00						
	EMS	2	\$75,000.00						
						TOTAL		\$2,800,000	
						\$375,000			
Staffing Option 2	Engines	3	\$75,000.00						
	Ladders	0	\$75,000.00						
	EMS	2	\$75,000.00						
						TOTAL			
						\$375,000			
Staffing Option 3	Engines	3	\$75,000.00						
	Ladders	0	\$75,000.00						
	EMS	2	\$75,000.00						
						TOTAL			
						\$375,000			

**Stevens County, Minnesota**  
**Year study was conducted: 2011**

	<b>Stevens County, MN (2011)</b>					
<b>Jurisdiction</b>	Chokio FD	Donnelly FD	Hancock FD	Morris FD	<b>Total for this area</b>	<b>rate per 1,000</b>
<b>Area (sq/mi)</b>	175	121	138.5	122	<b>556.5</b>	
<b>Population</b>	1,243	908	1,706	6,704	<b>10,561</b>	
<b>Response districts</b>						
<b>Total budget</b>						
<b>Sworn Personnel</b>					<b>30.33</b>	<b>2.87</b>
Chiefs	1	1	1	1	<b>4.00</b>	
Assistant Chiefs	1	2	1	2	<b>6.00</b>	
Training officer						
Division chief						
Battalion Chief/Captain		0.3333333		1	<b>1.33</b>	
Lieutenant						
Firefighter	3.6666667	4.3333333	4.6666667	6.3333333	<b>19</b>	
R.A.B.M.						
Secretary	1 (admin)	1 (admin)	1 (admin)	1 (admin)		
<b>Salaries</b>						
non listed						
<b>Apparatus (rate per 1,000)</b>						
Engines	2	2	3	3	<b>10</b>	
Ladders				1	<b>1</b>	
Quints						
Water Tankers	1	1	2	1	<b>5</b>	
Support vehicles	2	2	3	4	<b>11</b>	
EMS vehicles						
Staff vehicles						
<b>Number of Fire Stations (rate per 1,000)</b>	1	1	1	1	<b>4</b>	
<b>ISO rating</b>	7	7 (9)	6 (9)	6		

**Purpose of the study:**

To evaluate the current delivery of fire and emergency services throughout the county and to provide recommendations regarding the feasibility of moving forward with shared or cooperative efforts among the four emergency service providers.

**End results of the study:**

The Evaluation of Current Conditions for this project concludes with an evaluation of incident command and control, mutual and automatic aid systems, training programs, and life safety services programs.

## ONE DEPARTMENT MODEL

	CURRENT			NFPA LOW	p/day	NFPA MEDIAN	p/day	NFPA HIGH	p/day
Population	10,561			10,561		10,561		10,561	
# of FTEs	30.33	10	p/day	0	0	11	4	81	27
FTEs per 1000	2.87			0		1		7.69	
# Stations	4								
Staffing Option 1	16	x 3 shifts =	48	Staffing Option 1 4 person Engine, Ladder --- 2 person EMS					
Staffing Option 2	13	x 3 shifts =	39	Staffing Option 2 3 Person Engine, Ladder --- 2 person EMS					
Staffing Option 3	34	x 3 shifts =	102	Staffing Option 3 3 Person Engine, 2 Person Ladder, 2 person EMS					
Staffed Apparatus	4.4.2	Need		3.3.2	Need		3.2.2	Need	
Engine	0.75	3		1.00	3		1.00	3	
Ladder	0	0		0.00	0		0.00	0	
EMS	1	2		1.00	2		1.00	2	
	TOTAL	5		TOTAL	5		TOTAL	5	
To operate a 4 person Engine & Ladder and a 2 person EMS you need 210 FTEs on shift									
To operate a 3 person Engine & Ladder and 2 person EMS you need 173 FTEs on shift									
To operate a 3 person Engine, 2 person Ladder and 2 person EMS you need 165 FTEs on shift									
FINANCIAL								CURRENT	
Staffing Option 1	Engines	3	\$75,000.00					30.333333	\$75,000.00
	Ladders	0	\$75,000.00				TOTAL	\$2,275,000	
	EMS	2	\$75,000.00				\$375,000		
Staffing Option 2	Engines	3	\$75,000.00						
	Ladders	0	\$75,000.00				TOTAL		
	EMS	2	\$75,000.00				\$375,000		
Staffing Option 3	Engines	3	\$75,000.00						
	Ladders	0	\$75,000.00				TOTAL		
	EMS	2	\$75,000.00				\$375,000		

**The Cities of Wausau, Rothschild, Schofield, Rib Mountain, Weston, Wisconsin  
Year study was conducted: 2013**

	<b>Wausau, Rothschild, Schofield, Rib Mountain, Weston, WI</b>						
<b>Jurisdiction</b>	<b>Rib Mountain</b>	<b>Rothschild</b>	<b>Schofield</b>	<b>Wausau</b>	<b>Weston</b>	<b>Total for area</b>	<b>rate per 1,000</b>
<b>Service Area (sq/mi)</b>	48.9	6.9	2.8	217.7	115.5	391.8	
<b>Population served</b>	8,075	5,269	2,167	47261	15687	78,459	
<b>Response districts</b>							
<b>Total budget</b>							
<b>Sworn Personnel</b>						<b>69.33</b>	<b>0.88</b>
Chiefs	1	0.33	0.33	1	1	<b>3.67</b>	
Assistant/Deputy Ch	3	0.67	0.33	1	0.3333333	<b>5.33</b>	
Fire Marshal				1		<b>1.00</b>	
Battalion Chief/Capt	1	0.67	0.33		1.3333333	<b>3.33</b>	
Lieutenant	1	1.33	0.33		2.3333333		
Firefighter	9.3333333	7.33	8.33		17	<b>42.00</b>	
Driver operator	1			12		<b>12.00</b>	
Fire Inspector				1		<b>1.00</b>	
Administrative				1		<b>1.00</b>	
<b>Salaries</b>							
non listed							
<b>Apparatus (rate per 1,000)</b>							
Engines	1	1	2	4	2	<b>10</b>	
Ladders	1	1		2	1	<b>5</b>	
Quints							
Water Tankers	1	1		1	2	<b>5</b>	
Support vehicles	3	1		1	1	<b>6</b>	
EMS vehicles	3	2	2	4	3	<b>14</b>	
Staff vehicles							
<b>Number of Fire Stations (rate per 1,000)</b>	1	1	1	3	1	<b>7</b>	
<b>ISO rating</b>	4	5	5	3	4(9)		

**Purpose of the study:**

To provide a review of the existing fire and emergency services system within the greater Wausau region and to identify potential feasible options for shared or cooperative services in the future.

**End results of the study:**

There are several areas that may be considered as potential sites for additional facilities if development were to occur or if the departments chose to increase their service delivery model.



## ONE DEPARTMENT MODEL

	CURRENT			NFPA LOW	p/day	NFPA MEDIAN	p/day	NFPA HIGH	p/day
Population	78,459			78,459		78,459		78,459	
# of FTEs	69.33	23	p/day	2	1	100	33	271	90
FTEs per 1000	0.88			0.03		1.28		3.46	
# Stations	7								
Staffing Option 1	62	x 3 shifts =	186	Staffing Option 1 4 person Engine, Ladder --- 2 person EMS					
Staffing Option 2	51	x 3 shifts =	153	Staffing Option 2 3 Person Engine, Ladder --- 2 person EMS					
Staffing Option 3	56	x 3 shifts =	168	Staffing Option 3 3 Person Engine, 2 Person Ladder, 2 person EMS					
Staffed Apparatus	4.4.2	Need		3.3.2	Need		3.2.2	Need	
Engine	1.75	7		2.33	7		2.33	7	
Ladder	1	4		1.33	4		1.33	3	
EMS	4.5	9		4.50	9		4.50	9	
	TOTAL	20		TOTAL	20		TOTAL	19	
To operate a 4 person Engine & Ladder and a 2 person EMS you need 210 FTEs on shift									
To operate a 3 person Engine & Ladder and 2 person EMS you need 173 FTEs on shift									
To operate a 3 person Engine, 2 person Ladder and 2 person EMS you need 165 FTEs on shift									
FINANCIAL								CURRENT	
Staffing Option 1	Engines	7	\$75,000.00					69.33333333	\$75,000.00
	Ladders	4	\$75,000.00			TOTAL		\$5,200,000	
	EMS	9	\$75,000.00			\$1,500,000			
Staffing Option 2	Engines	7	\$75,000.00						
	Ladders	4	\$75,000.00			TOTAL			
	EMS	9	\$75,000.00			\$1,500,000			
Staffing Option 3	Engines	7	\$75,000.00						
	Ladders	2.6666667	\$75,000.00			TOTAL			
	EMS	9	\$75,000.00			\$1,400,000			

**The Cities of Bay Village, Fairview Park, Lakewood, N. Olmsted, N. Ridgeville, Rocky River, Westlake, Cuyahoga County, Ohio**  
**Year study was conducted: 2010**

	Bay Village, Fairview Park, Lakewood, N. Olmsted, N. Ridgeville, Rocky River, Westlake, OH								
Jurisdiction	Bay Village	Fairview	Lakewood	N. Olmsted	N. Ridgeville	Rocky River	Westlake	Area Total	rate per 1,000
Service Area (sq/mi)	7.1	4.7	6.7	11.6	23.5	5.6	15.9	75.1	
Population served	16,087	17,572	56,646	34113	22338	20735	31719	199,210	
Response districts									
Total budget									
Sworn Personnel	28	29	88	41	37	29	50	302	1.52
Chiefs	1	1	1	1	1	1	1	7	
Assistant/Deputy Chiefs			3		2		1	6	
Fire Marshal			1			1	0.75	2.75	
Battalion Chief/Captain	3	3	12	3	3	3	3	30	
Lieutenant	3	3		6	6	6	6	30	
Firefighter	20	21	56	30	24	18	33	202	
Paramedic Supervisor			3					3	
EMT/PARAMEDIC			10					10	
Fire Inspector			1				(.5 PT)	1.5	
Administrative		1	1	1	1	0.5	2	6.5	
Salaries	Bay Village	Fairview	Lakewood	N. Olmsted	N. Ridgeville	Rocky River	Westlake		
Fire Chief	95,046.00	89,011.00	100,838.00	96,512.00	93,413.00	85,659.00	110,900.00		
Assistant Fire Chief					84,718.00		91,200.00		
Administrative Assistant		45,071.00	46,669.00	38,730.00	42,885.00	45,061.00			
Fire Marshal			73,328.00				71,926.00		
Fire Inspector			67,135.00			72,472.00	51,376.00		
Fire Prevention Lieutenant	68,630.00						73,637.00		
Fire Prevention Secretary							40,200.00		
Fire Prevention Captain				81,338.00					
Assistant Chief (Shift Commander)			84,223.00						
Captain/Paramedic	77,998.00								
Captain	76,179.00	83,539.00	73,328.00	76,017.00	73,101.00	81,168.00	81,737.00		
Paramedic Supervisor			60,894.00						
Lieutenant/Paramedic	70,269.00								
Lieutenant	68,630.00	73,928.00		68,793.00	64,706.00	72,472.00	73,637.00		
Firefighter/Paramedic	63,305.00	65,423.00	61,031.00		57,262.00	64,707.00	66,639.00		
Firefighter/EMT	62,370.00		61,031.00		55,836.00				
Firefighter			61,031.00	60,879.00					
EMT-Paramedic			51,445.00						
Firefighter/Mechanic			67,134.00				69,658.00		
Apparatus									
Engines	2	2	3	2	1	2	3	15	
Ladders	1	1	2	1	1	1	1	8	
Quints					2			2	
Water Tankers									
Support vehicles	1		1	1	2	3		8	
EMS vehicles	2	2	5	3	4	3	4	23	
Staff vehicles						1		1	
Number of Fire Stations (rate per 1,000)	1	1	3	2	2	1	2	12	
ISO rating	5	3	4	4	4	4	4		

ONE DEPARTMENT MODEL									
	CURRENT			NFPA LOW		NFPA MEDIAN		NFPA HIGH	
					p/day		p/day		p/day
Population	199,210			199,210		199,210		199,210	
# of FTEs	302	101	p/day	36	12	267	89	647	216
FTEs per 1000	1.52			0.18		1.34		3.25	
# Stations	12								
Staffing Option 1	110	x 3 shifts =	330	Staffing Option 1 4 person Engine, Ladder --- 2 person EMS					
Staffing Option 2	90	x 3 shifts =	270	Staffing Option 2 3 Person Engine, Ladder --- 2 person EMS					
Staffing Option 3	76	x 3 shifts =	228	Staffing Option 3 3 Person Engine, 2 Person Ladder, 2 person EMS					
Staffed Apparatus	4.4.2	Need		3.3.2	Need		3.2.2	Need	
Engine	3	12		4.00	12		4.00	12	
Ladder	2	8		2.67	8		2.67	5	
EMS	7.5	15		7.50	15		7.50	15	
TOTAL		35		TOTAL	35		TOTAL	32	
To operate a 4 person Engine & Ladder and a 2 person EMS you need 210 FTEs on shift									
To operate a 3 person Engine & Ladder and 2 person EMS you need 173 FTEs on shift									
To operate a 3 person Engine, 2 person Ladder and 2 person EMS you need 165 FTEs on shift									
FINANCIAL									
Staffing Option 1	Engines	12	\$75,000.00					302	\$75,000.00
	Ladders	8	\$75,000.00			TOTAL		\$22,650,000	
	EMS	15	\$75,000.00			\$2,625,000			
Staffing Option 2	Engines	12	\$75,000.00						
	Ladders	8	\$75,000.00			TOTAL			
	EMS	15	\$75,000.00			\$2,625,000			
Staffing Option 3	Engines	12	\$75,000.00						
	Ladders	5.333333	\$75,000.00			TOTAL			
	EMS	15	\$75,000.00			\$2,425,000			

### Purpose of the study:

The purpose of this study was to review and analyze the current deployment and practices of the emergency services provided within the Westshore Council of Governments, including; Bay Village, Fairview Park, Lakewood, North Olmsted, North Ridgeville, Rocky River, and Westlake, to assess future needs and provide the organization with options for enhanced cooperative efforts to meet those future needs.

### End results of the study:

During the evaluation of each organization, they found that the departments are operating not unlike many agencies of similar organizations, geography, population, and demographics. Throughout the evaluation section of the report, 75 short and mid-term recommendations are highlighted and then cataloged in the appendix of the report.

APPENDIX G

LAKE COUNTY FIRE CONSOLIDATION STUDY

FTE COMPARISON TO NFPA RATIOS

SOURCE: CSU Data Compilation and 2012 NFPA Survey of Fire Departments for U.S. Fire Experience

	ONE DISTRICT STRUCTURE	Career Firefighter Ratios by Population Protected (100,000 to 249,999)				
		LOW	MEDIUM	HIGH		
Population	233,231					
Area of Coverage (sq. miles)	240.70					
# of FTEs	437.00	41.98	312.53	758.00		
# of FTEs (per day)	109.25	10.50	78.13	189.50		
FTEs per 1,000	1.87	0.18	1.34	3.25		
FTE ratio as % of Medium Ratio	140%					
# of Stations	28					
	TWO DISTRICT STRUCTURE		Career Firefighter Ratios by Population Protected (100,000 to 249,999)		Career Firefighter Ratios by Population Protected (50,000 to 99,999)	
	District One	District Two				
		</				

LAKE COUNTY FIRE CONSOLIDATION STUDY  
ONE DISTRICT  
**COMPARISON OF OPTIMAL EQUIPMENT STAFFING OPTIONS**  
**SOURCE: CSU Data Compilation**

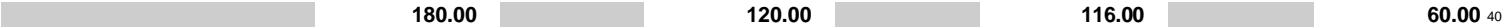
	Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	
	ONE DISTRICT STRUCTURE	Staffing Option 1 4/4/2 (per day)	Staffing Option 1 4/4/2 (per day X 4)	Staffing Option 2 3/3/2 (per day)	Staffing Option 2 3/3/2 (per day X 4)	Staffing Option 3 3/2/2 (per day)	Staffing Option 3 3/2/2 (per day X 4)	Staffing Option 4 2/2/2 (per day)	Staffing Option 4 2/2/2 (per day X 4)	
1 Population	233,231									1
2 Area of Coverage (sq. miles)	240.70									2
3 # of FTEs	437.00									3
4 # of FTEs (per day)	109.25									4
5 FTEs per 1,000	1.87									5
6 2012 Budget – Personnel Services	\$29,737,488									6
7 Avg. 2012 Budget Wages per FTE	\$68,049									7
8 Projected FTE Staffing for Engines		112.00	448.00	84.00	336.00	84.00	336.00	56.00	224.00	8
9 Projected FTE Staffing for Ladders		32.00	128.00	21.00	84.00	12.00	48.00	12.00	48.00	9
10 Projected FTE Staffing for EMS		62.00	248.00	62.00	248.00	62.00	248.00	62.00	248.00	10
11 Projected FTE Staffing Total		206.00	824.00	167.00	668.00	158.00	632.00	130.00	520.00	11
12 Number of Engines	28	28		28		28		28		12
13 Number of Ladders	8	8		7		6		6		13
14 Number of EMS Vehicles	31	31		31		31		31		14
15 Total Apparatus	67	67		66		65		65		15
16 Current FTE per apparatus	1.63									16
17 Projected FTE per apparatus		3.07		2.53		2.43		2.00		17
18 Projected Personnel Services Cost		\$14,018,129		\$11,364,212		\$10,751,769		\$8,846,392		18
19 Difference Between 2012 Budget and Projected			-\$26,335,029		-\$15,719,358		-\$13,269,588		-\$5,648,081	19
20 Difference Expressed as FTEs			387.00		231.00		195.00		83.00	20

TWO DISTRICT SCENARIO  
COMPARISON OF OPTIMAL EQUIPMENT STAFFING OPTIONS  
SOURCE: CSU Data Compilation

	Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	
	TWO DISTRICT STRUCTURE	Staffing Option 1 4/4/2	Staffing Option 1 4/4/2	Staffing Option 2 3/3/2	Staffing Option 2 3/3/2	Staffing Option 3 3/2/2	Staffing Option 3 3/2/2	Staffing Option 4 2/2/2	Staffing Option 4 2/2/2	
	District One	(per day)	(per day X 4 )	(per day)	(per day X 4 )	(per day)	(per day X 4 )	(per day)	(per day X 4 )	
1 Population	140,737									1
2 Area of Coverage (sq. miles)	91.41									2
3 # of FTEs	257.00									3
4 # of FTEs (per day)	64.25									4
5 FTEs per 1,000	1.83									5
6 2012 Budget – Personnel Services	\$18,571,159									6
7 Avg. 2012 Budget Wages per FTE	\$72,261									7
8 Projected FTE Staffing for Engines		56.00	224.00	42.00	168.00	42.00	168.00	28.00	112.00	8
9 Projected FTE Staffing for Ladders		28.00	112.00	18.00	72.00	10.00	40.00	10.00	40.00	9
10 Projected FTE Staffing for EMS		32.00	128.00	32.00	128.00	32.00	128.00	32.00	128.00	10
11 Projected FTE Staffing Total		116.00	464.00	92.00	368.00	84.00	336.00	70.00	280.00	11
12 Number of Engines	14	14		14		14		14		12
13 Number of Ladders	7	7		6		5		5		13
14 Number of EMS Vehicles	16	16		16		16		16		14
15 Total Apparatus	37	37		36		35		35		15
16 Current FTE per apparatus	1.74									16
17 Projected FTE per apparatus		3.14		2.56		2.40		2.00		17
18 Projected Personnel Services Cost		\$8,382,313	\$33,529,253	\$6,648,041	\$26,592,166	\$6,069,951	\$24,279,804	\$5,058,292	\$20,233,170	18
19 Difference Between 2012 Budget and Projected			-\$14,958,093		-\$8,021,007		-\$5,708,644		-\$1,662,010	19
20 Difference Expressed as FTEs			207.00		111.00		79.00		23.00	20

	TWO DISTRICT STRUCTURE	Staffing Option 1 4/4/2	Staffing Option 1 4/4/2	Staffing Option 2 3/3/2	Staffing Option 2 3/3/2	Staffing Option 3 3/2/2	Staffing Option 3 3/2/2	Staffing Option 4 2/2/2	Staffing Option 4 2/2/2	
	District Two	(per day)	(per day X 4 shifts)	(per day)	(per day X 4 shifts)	(per day)	(per day X 4 shifts)	(per day)	(per day X 4 shifts)	
21 Population	92,494									21
22 Area of Coverage (sq. miles)	149.29									22
23 # of FTEs	180.00									23
24 # of FTEs (per day)	45.00									24
25 FTEs per 1,000	1.95									25
26 2012 Budget – Personnel Services	\$11,166,328									26
27 Avg. 2012 Budget Wages per FTE	\$62,035									27
28 Projected FTE Staffing for Engines		56.00	224.00	42.00	168.00	42.00	168.00	28.00	112.00	28
29 Projected FTE Staffing for Ladders		4.00	16.00	3.00	12.00	2.00	8.00	2.00	8.00	29
30 Projected FTE Staffing for EMS		30.00	120.00	30.00	120.00	30.00	120.00	30.00	120.00	30
31 Projected FTE Staffing Total		90.00	360.00	75.00	300.00	74.00	296.00	60.00	240.00	31
32 Number of Engines	14	14		14		14		14		32
33 Number of Ladders	1	1		1		1		1		33
34 Number of EMS Vehicles	15	15		15		15		15		34
35 Total Apparatus	30	30		30		30		30		35
36 Current FTE per apparatus	1.5									36
37 Projected FTE per apparatus		3.00		2.50		2.47		2.00		37
38 Projected Personnel Services Cost		\$5,583,164	\$22,332,657	\$4,652,637	\$18,610,547	\$4,590,602	\$18,362,407	\$3,722,109	\$14,888,438	38
39 Difference Between 2012 Budget and Projected			-\$11,166,328		-\$7,444,219		-\$7,196,078		-\$3,722,109	39

<sup>40</sup> Difference Expressed as FTEs





## LAKE COUNTY FIRE CONSOLIDATION STUDY

## THREE DISTRICT SCENARIO

## COMPARISON OF OPTIMAL EQUIPMENT STAFFING OPTIONS

SOURCE: CSU Data Compilation

	Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	
	THREE DISTRICT STRUCTURE	Staffing Option 1 4/4/2 (per day)	Staffing Option 1 4/4/2 (per day X 4 shifts)	Staffing Option 2 3/3/2 (per day)	Staffing Option 2 3/3/2 (per day X 4 shifts)	Staffing Option 3 3/2/2 (per day)	Staffing Option 3 3/2/2 (per day X 4 shifts)	Staffing Option 4 2/2/2 (per day)	Staffing Option 4 2/2/2 (per day X 4 shifts)	
1 Population	86,135									1
2 Area of Coverage (sq. miles)	61.76									2
3 # of FTEs	158.00									3
4 # of FTEs (per day)	39.50									4
5 FTEs per 1,000	1.83									5
6 2012 Budget – Personnel Services	\$11,583,867									6
7 Avg. 2012 Budget Wages per FTE	\$73,316									7
8 Projected FTE Staffing for Engines		32.00	128.00	24.00	96.00	24.00	96.00	16.00	64.00	8
9 Projected FTE Staffing for Ladders		20.00	80.00	15.00	60.00	8.00	32.00	8.00	32.00	9
10 Projected FTE Staffing for EMS		20.00	80.00	20.00	80.00	20.00	80.00	20.00	80.00	10
11 Projected FTE Staffing Total		72.00	288.00	59.00	236.00	52.00	208.00	44.00	176.00	11
12 Number of Engines	8	8		8		8		8		12
13 Number of Ladders	5	5		5		4		4		13
14 Number of EMS Vehicles	10	10		10		10		10		14
15 Total Apparatus	23	23		23		22		22		15
16 Current FTE per apparatus	1.72									16
17 Projected FTE per apparatus		3.13		2.57		2.36		2.00		17
18 Projected Personnel Services Cost		\$5,278,724		\$4,325,621		\$3,812,412		\$3,225,887		18
19 Difference Between 2012 Budget and Projected			-\$9,531,030		-\$5,718,618		-\$3,665,781		-\$1,319,681	19
20 Difference Expressed as FTEs			130.00		78.00		50.00		18.00	20

	THREE DISTRICT STRUCTURE	Staffing Option 1 4/4/2 (per day)	Staffing Option 1 4/4/2 (per day X 4 shifts)	Staffing Option 2 3/3/2 (per day)	Staffing Option 2 3/3/2 (per day X 4 shifts)	Staffing Option 3 3/2/2 (per day)	Staffing Option 3 3/2/2 (per day X 4 shifts)	Staffing Option 4 2/2/2 (per day)	Staffing Option 4 2/2/2 (per day X 4 shifts)	
21 Population	94,564									21
22 Area of Coverage (sq. miles)	55.34									22
23 # of FTEs	178.67									23
24 # of FTEs (per day)	44.67									24
25 FTEs per 1,000	1.89									25
26 2012 Budget – Personnel Services	\$11,400,753									26
27 Avg. 2012 Budget Wages per FTE	\$63,810									27
28 Projected FTE Staffing for Engines		48.00	192.00	36.00	144.00	36.00	144.00	24.00	96.00	28
29 Projected FTE Staffing for Ladders		10.00	40.00	7.50	30.00	3.00	12.00	3.00	12.00	29
30 Projected FTE Staffing for EMS		26.00	104.00	26.00	104.00	26.00	104.00	26.00	104.00	30
31 Projected FTE Staffing Total		84.00	336.00	69.50	278.00	65.00	260.00	53.00	212.00	31
32 Number of Engines	12	12		12		12		12		32
33 Number of Ladders	2.5	2.5		2.5		1.5		1.5		33
34 Number of EMS Vehicles	13	13		13		13		13		34
35 Total Apparatus	27.5	27.5		27.5		26.5		26.5		35
36 Current FTE per apparatus	1.62									36
37 Projected FTE per apparatus		3.05		2.53		2.45		2.00		37
38 Projected Personnel Services Cost		\$5,360,056		\$4,434,808		\$4,147,662		\$3,381,940		38
39 Difference Between 2012 Budget and Projected			-\$10,039,469		-\$6,338,479		-\$5,189,895		-\$2,127,006	39
40 Difference Expressed as FTEs			157.33		99.33		81.33		33.33	40

	THREE DISTRICT STRUCTURE	Staffing Option 1 4/4/2 (per day)	Staffing Option 1 4/4/2 (per day X 4 shifts)	Staffing Option 2 3/3/2 (per day)	Staffing Option 2 3/3/2 (per day X 4 shifts)	Staffing Option 3 3/2/2 (per day)	Staffing Option 3 3/2/2 (per day X 4 shifts)	Staffing Option 4 2/2/2 (per day)	Staffing Option 4 2/2/2 (per day X 4 shifts)	
41 Population	52,532									41
42 Area of Coverage (sq. miles)	123.60									42
43 # of FTEs	100.33									43
44 # of FTEs (per day)	25.08									44
45 FTEs per 1,000	1.91									45
46 2012 Budget – Personnel Services	\$6,752,867									46
47 Avg. 2012 Budget Wages per FTE	\$67,304									47
48 Projected FTE Staffing for Engines		32.00	128.00	24.00	96.00	24.00	96.00	16.00	64.00	48
49 Projected FTE Staffing for Ladders		2.00	8.00	1.50	6.00	1.00	4.00	1.00	4.00	49
50 Projected FTE Staffing for EMS		16.00	64.00	16.00	64.00	16.00	64.00	16.00	64.00	50
51 Projected FTE Staffing Total		50.00	200.00	41.50	166.00	41.00	164.00	33.00	132.00	51
52 Number of Engines	8	8		8		8		8		52
53 Number of Ladders	0.5	0.5		0.5		0.5		0.5		53
54 Number of EMS Vehicles	8	8		8		8		8		54
55 Total Apparatus	16.5	16.5		16.5		16.5		16.5		55
56 Current FTE per apparatus	1.52									56
57 Projected FTE per apparatus		3.03		2.52		2.48		2.00		57
58 Projected Personnel Services Cost		\$3,365,216		\$2,793,129		\$2,759,477		\$2,221,043		58
59 Difference Between 2012 Budget and Projected			-\$6,707,997		-\$4,419,650		-\$4,285,042		-\$2,131,304	59
60 Difference Expressed as FTEs			99.67		65.67		63.67		31.67	60

LAKE COUNTY FIRE CONSOLIDATION STUDY

**COMPARISON OF OPTIMAL EQUIPMENT STAFFING OPTIONS**

**SOURCE: CSU Data Compilation**

		Staffing Option 1	Option 1 vs. 2012	Staffing Option 2	Option 2 vs. 2012	Staffing Option 3	Option 3 vs. 2012	Staffing Option 4	Option 4 vs. 2012
ONE DISTRICT		\$56,072,517	\$26,335,029	\$45,456,846	\$15,719,358	\$43,007,076	\$13,269,588	\$35,385,569	\$5,648,081
TWO DISTRICTS									
West		\$33,529,253	\$14,958,093	\$26,592,166	\$8,021,007	\$24,279,804	\$5,708,644	\$20,233,170	\$1,662,010
East		<u>\$22,332,657</u>	\$11,166,328	<u>\$18,610,547</u>	<u>\$7,444,219</u>	<u>\$18,362,407</u>	<u>\$7,196,078</u>	<u>\$14,888,438</u>	<u>\$3,722,109</u>
Total		\$55,861,909	\$26,124,422	\$45,202,713	\$15,465,225	\$42,642,210	\$12,904,723	\$35,121,608	\$5,384,120
THREE DISTRICTS									
West		\$21,114,897	\$9,531,030	\$17,302,485	\$5,718,618	\$15,249,648	\$3,665,781	\$12,903,548	\$1,319,681
Central		\$21,440,223	\$10,039,469	\$17,739,232	\$6,338,479	\$16,590,649	\$5,189,895	\$13,527,760	\$2,127,006
East		<u>\$13,460,864</u>	<u>\$6,707,997</u>	<u>\$11,172,517</u>	<u>\$4,419,650</u>	<u>\$11,037,909</u>	<u>\$4,285,042</u>	<u>\$8,884,171</u>	<u>\$2,131,304</u>
Total		\$56,015,985	\$26,278,497	\$46,214,235	\$16,476,747	\$42,878,206	\$13,140,718	\$35,315,479	\$5,577,991